GAS

ENGINEERING • UTILIZATION • LOAD-BUILDING • MANAGEMENT

EAST ENGINEERING LIBRARY

NOV 2 8 1945

To Show RANGE *Salesmen*

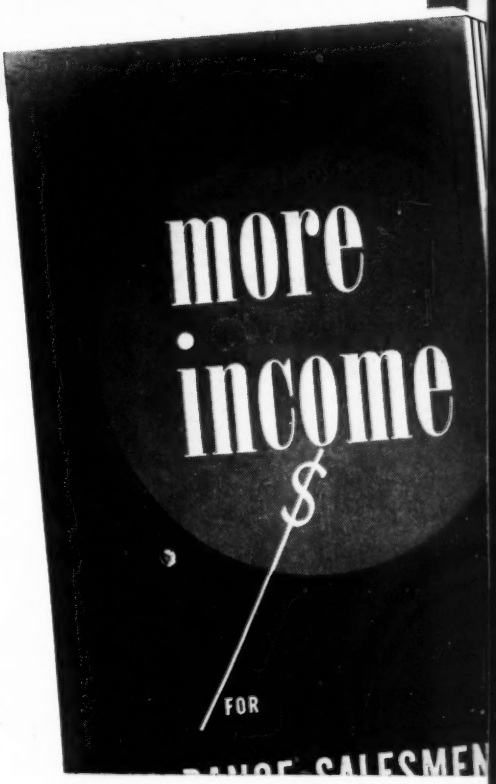
HOW TO WIN FRIENDS AND INFLUENCE HOUSEWIVES

38 Pages of *FACTS, FIGURES & IDEAS* from which to build a hard-hitting Sales Story on *RANGES*

HERE'S a free, pocket-size book that will help train your salesmen to be *star* salesmen. Telling the story of "Measured Heat," it builds up a winning argument that no housewife can ignore.

Shows why a new kitchen range should be No. 1 on the post-war shopping list . . . gives convincing reasons why it's more practical for a housewife to invest *first* in a new kitchen range, *before* buying other needed items. Explains how she can save $88 a year and improve food quality.

Gives many other interesting cooking facts that women want to know. Basic principles of cooking are explained, common cooking failures are analyzed. You can use this new book as a basic sales training piece for new salesmen. Write for it today.



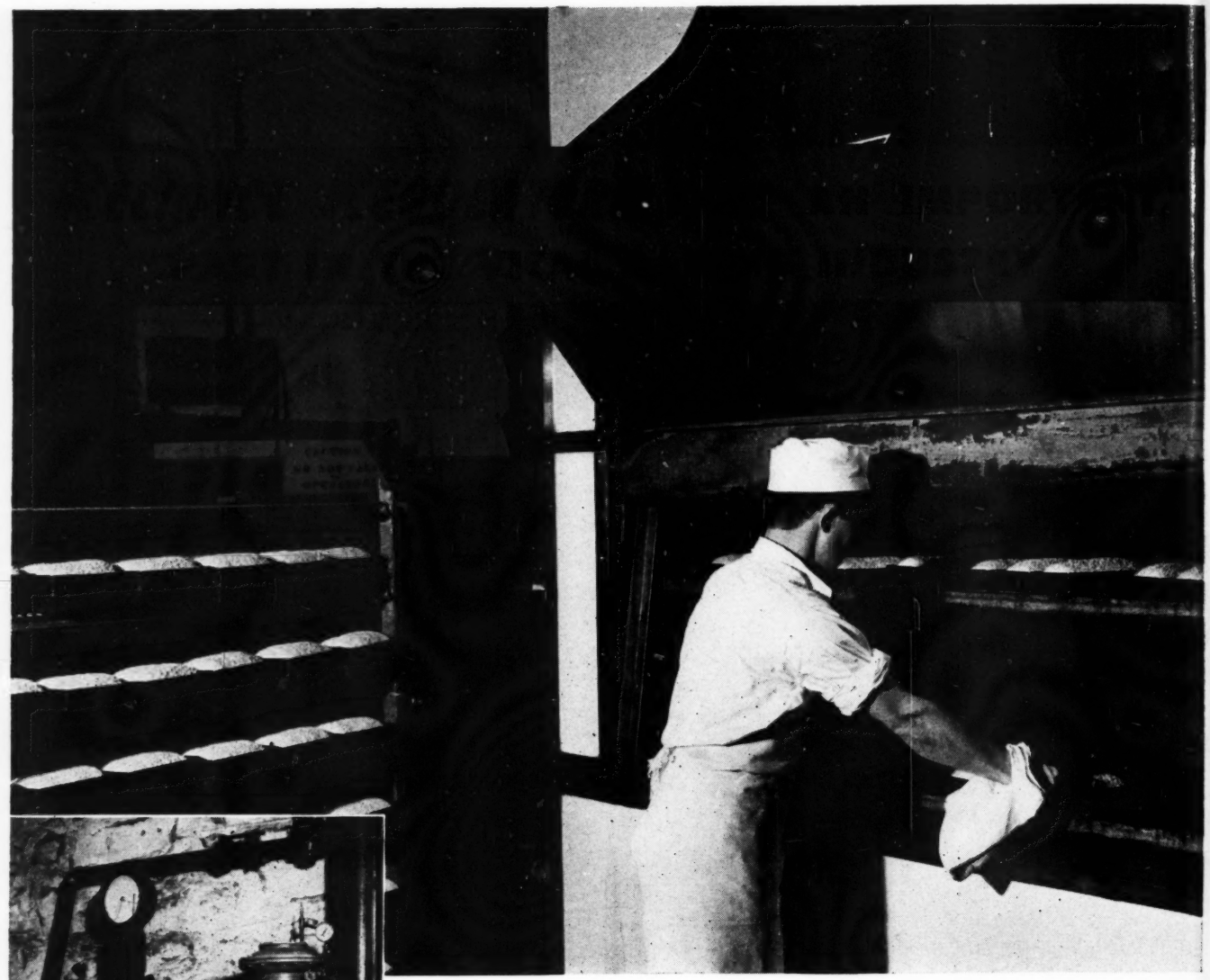
Chock-full of interesting pictures, diagrams and information on modern range cooking and how to sell it.

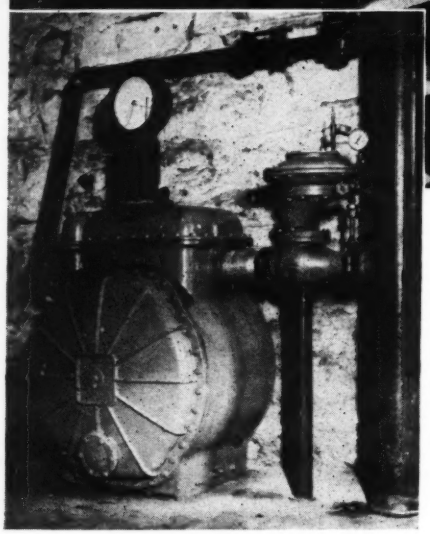
FREE AS MANY COPIES AS YOU NEED FOR YOUR SALESMEN

Even More Than Before YOU CAN DEPEND ON

Robertshaw THERMOSTAT COMPANY

YOUNGWOOD, PENNSYLVANIA





Above illustration shows an American Metric Ironcase Meter and Reliance Balanced Valve Regulator, which control the gas pressure in many of today's modern baking plants.

Providing an essential part of every meal for all of us, the baking industry is indeed "big business" today. In large, spotlessly clean plants, with modern methods and mass production efficiency, and through up-to-the-minute distribution, these necessities and "goodies" are brought to you ... fresh, flavorful and taken for granted ... for just a few pennies a day.

In the preparation of fine quality bakery goods, a positive control of temperature in gas fired ovens is an absolute necessity. And it is in the positive control of these temperatures that Reliance Regulators play their important part.

For over thirty-four years Reliance Engineers have worked with industry to perfect the flawless, trouble-free performance built into every Reliance Regulator —performance you can depend on regardless of requirements.

Reliance Regulators are made in types and sizes most needed by the gas industry —distribution, industrial, domestic—for natural, manufactured and liquid petroleum gas.

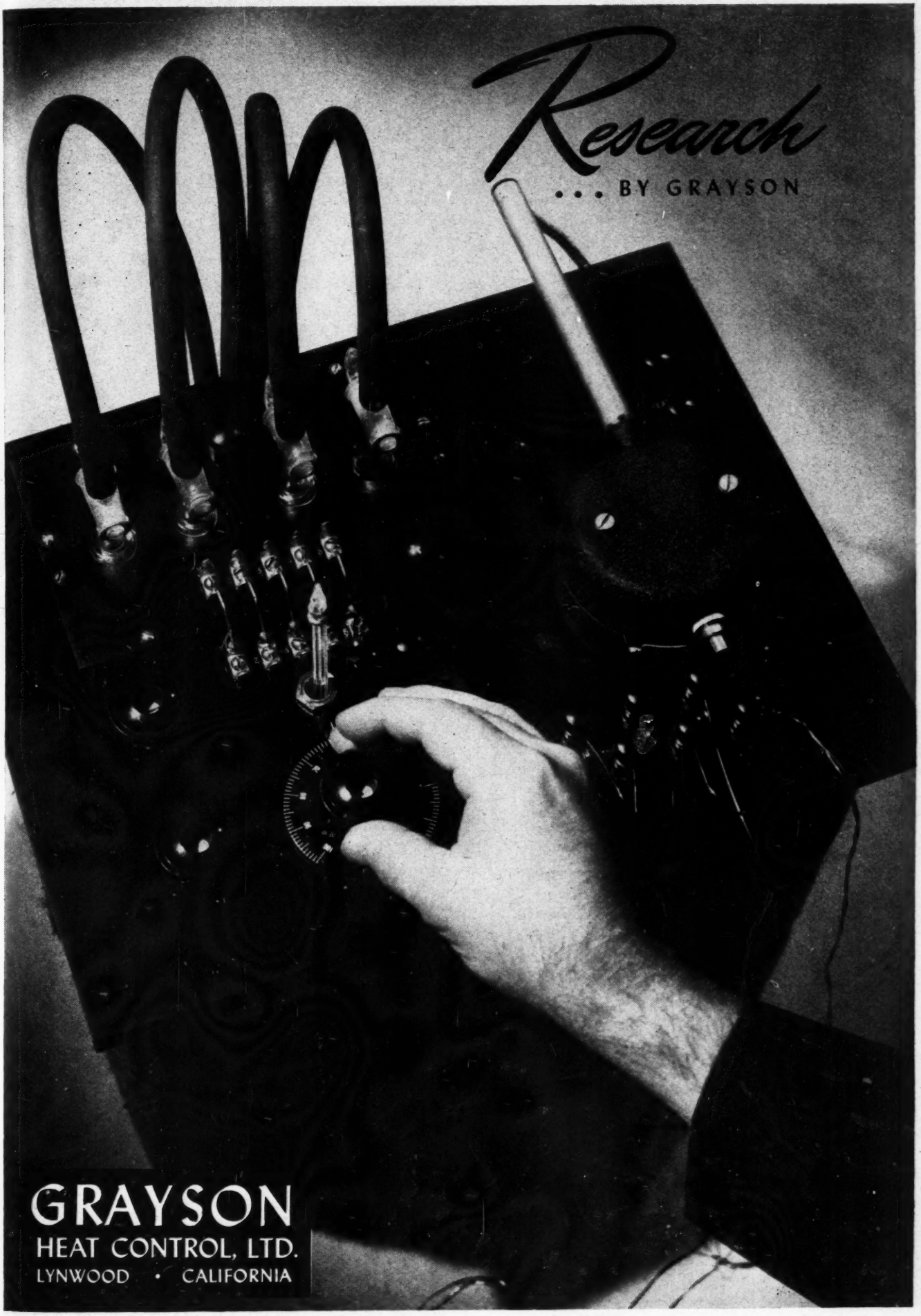
Reliance bulletins give complete information. Write TODAY for your copy.

AMERICAN METERS

RELIANCE

AMERICAN METER CO EST 1836

RELIANCE REGULATORS


Research
... BY GRAYSON
GRAYSON
HEAT CONTROL, LTD.
LYNWOOD • CALIFORNIA

Advertisers

American Brass Co. —
American Meter Co. —
American Radiator & Standard Sanitary Corp. —
American Recording Chart Co. 70
American Stove Co. —
Association of Gas Appliance & Equipment Manufacturers —

Barrett Division 10
Bechtel Brothers McCone Co. 7
Blaw-Knox Company 8
Bryant Heater Co. —

Carbide & Carbon Chemical Corp. —
Cast Iron Pipe Research Assoc. 4, 5
Clark Bros. Co., Inc. 18
The Cleveland Trencher Co. 68
Columbia Gas & Electric Corp. —
Connelly Iron Sponge & Governor Co. 82
Continental Water Heater Co., Ltd. —
The Cooper-Bessemer Corp. 9
Crane Co. 16
Cribben & Sexton Co. 12

Day & Night Mfg. Co. —
Dearborn Chemical Co. —
Domestic Thermostat Co. —
Detroit-Michigan Stove Co. —
Dresser, Industries, Inc. 15, 18, 42, 76, Fourth Cover
Dresser Manufacturing Division 15

Fisher Governor Co. —
Florence Stove Co. —
The Fluor Corp., Ltd. —

General Controls Third Cover
General Gas Light Co. 53
James Graham Manufacturing Co. 55
Grayson Heat Control Ltd. 1
E. F. Griffiths Co. 80

Hammel Radiator Engineering Co. —
Hardwick Stove Co. 67
Harper-Wyman Co. 49, 50

Johns-Manville 74

Kitson Co. 66

Merco Nordstrom Valve Co. 11
Lee B. Mettler Co. 80
Milwaukee Gas Specialty Co. —
Minneapolis-Honeywell Regulator Co. —
Mueller Co. 82

National Tube Co. —
Natural Gas Equipment, Inc. —
Natural Gas Odorizing Co. —
Nemec Combustion Engineers 64
Norton McMurray Mfg. Co. 80

O'Keefe & Merritt Co. —

Pacific Coast Gas Association 78
Pacific Gas & Electric Co. 77
Payne Furnace Co. Fourth Cover
Phillips Petroleum Co. 75
Pittsburgh Equitable Meter Co. 11
Pittsburg Water Heater Corp. 39

Reliance Regulator Corp. Second Cover
Reynolds Gas Regulator Co. 81
Rheem Manufacturing Co. 46
Robertshaw Thermostat Co. Front Cover
Roots-Connersville Blower Corp. —
Geo. D. Roper Corp. 71
Ruud Manufacturing Co. —

Semet-Solvay Engineering Corp. 82
Servel, Inc. 56
Sharples Chemicals, Inc. 3
M. B. Skinner Co. 63
A. O. Smith Corp. 61
Spencer Thermostat Co. 82
Sprague Meter Co. 45
Stacey Bros. Gas Construction Co. 76

Titan Valve & Mfg. Co. 37

Union Carbide & Carbon Corp. —
U. S. Pipe & Foundry Co. —
United States Steel —
Utility Appliance Corp. 79

Vapor Recovery Systems Co. 59
Vulcan Proofing Co. —

Walworth Co. 6
Ward Heater Co. 69
Warren Petroleum Corp. 72
Webster Engineering Co. —
Welsbach Engrg. & Mgmt. Corp. —
Whitehead Metals Products Co. —
Gar Wood Industries, Inc. 73

GAS

REG. U. S. PATENT OFFICE

Twenty-First Year of Publication

Contents for November, 1945

EDITORIAL COMMENT

Thermally Thinking ..... *By Elliott Taylor* 13
Highlights 17
Promotional Notes and Notions ..... *By Stanley Jenks* 47

FEATURE ARTICLES

A.G.A. Research and Promotional Plan—Key to the Industry's Progress ..... *By Ernest R. Acker* 19
P.G. and E. Launches $100,000 National Advertising Campaign 23
F.P.C. Natural Gas Investigation (Oklahoma City Hearing) ..... *By O. D. Hall* 24
Another Texas to Michigan Gas Line Sought 25
How to Size and Install Automatic Storage Gas Water Heaters:
How to Use the Water Heater Sizing Chart 26
Sizing Chart for Gas Water Heaters 27
Pointers on Water Heater Location and Installation 30
Some suggested Displays for Dealers featuring Gas Water Heaters 30
Training Program for Gas Appliance Servicemen:
No. 5 Range Servicing ..... *By C. C. Westmoreland* 32
Corrosion and Protection of Buried Metallic Structures: ..... *Edited by Guy Corfield*
Electrical Examination of Pipeline Coatings ..... *By John M. Pearson* 35
How to Prevent Accidents by Proper Use and Care of Tools 40
Two-Way Radio—Its Use in Gas Transmission ..... *By Lucien C. Bomar* 43

DEPARTMENTS

New Products 54
Associations 58
People 66
Obituaries 72
Pipeline News 76
Current Reading 80

Publication Office: **LOS ANGELES 14, California, 1709 West Eighth Street, DRexel 4337.**

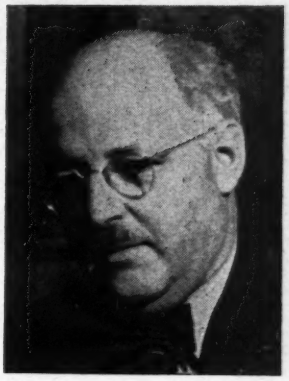
Branches: **NEW YORK 17, 50 E. 42nd Street, MUrray Hill 2-4504; WASHINGTON, D. C., 306 National Trust & Savings Building, District 0215; CHICAGO 3, Illinois, 1064 Peoples Gas Building, WABash 2589.**

JAY JENKINS.....President
JAMES E. JENKINS.....Secretary-Treasurer
ROY D. CRIPPEN..... General Manager
L. V. HOHL.....Eastern Manager
DAVID CARMEN.....Mid-West Manager
ARTHUR ROHMAN.....Editor
ELLIOTT TAYLOR.....Washington Editor
GUY CORFIELD.....Technical Editor
O. D. HALL.....Mid-Continent Editor
PAUL LADY.....Assistant Editor

November, 1945. Volume XXI. Number 11. G A S is published monthly by Western Business Papers, Inc., 1709 West Eighth Street, Suite 320, Los Angeles 14, California. Subscription price: United States, Mexico, Cuba, South and Central American countries (in advance), 25 cents the copy; two years for $3.00, $2.00 per year. Canada and all other countries, $3.00 per year. Entered as second-class matter August 20, 1936, at the post office at Los Angeles 14, Calif., under the Act of March 3, 1879. Member: Audit Bureau of Circulation; Associated Business Papers, Inc. Publishers: BUTANE-Propane News; Handbook BUTANE-PROPANE GASES; THE BOTTLED GAS MANUAL; WESTERN METALS.

THERMALLY THINKING

By ELLIOTT TAYLOR, Washington Editor



Research Free to Range

THE manufactured gas companies in the East are setting quite some store by the research in gas production that is being carried on as one of the blue chip entries in the American Gas Association's big advertising and promotion deal now entering its second year. The motivation behind the activity is the fear, or perhaps the realization, that something has to be done to pull house heating rates down out of the luxury brackets in manufactured gas areas. Gas utilities there are not too much worried about house heating just for itself, because it is a poor load factor business and not easy to make attractive on water gas, but they feel that to save the profitable cooking, water heating and the growing refrigeration load, they have to be able to offer the all-gas-home idea with rates that will not be prohibitive when heating is included.

Right now there are very few plants in the East, however, that could take on any appreciable increase in the heating load because the winter peaks involved would be in excess of their maximum daily plant capacities. So the researchers are trying to find a way to either increase the existing capacities of present plants, or devise some other means of stepping up potential output without incurring high investment plant costs. Normally any plant additions that operated only part time would tend to raise, rather than lower, the rates that could be offered prospective heating customers.

From the reports that were made during the recent convention of the association, it was apparent that no phenomenal developments in the lowering of manufactured gas costs have been achieved; and we gathered the impression that none are in sight.

Engineers tell us that manufactured gas plants cost to build anywhere from $150 to $180 per Mcf. of daily capacity, and that the fixed charges on such construction applied to the gas delivered will come to around 12c to 13c per Mcf. of output. Now let us say that under present conditions of labor and material, the net cost of making 530 Btu. water gas is 28c in the holder. Add to this the fixed charges on the plant and we have gas costing at the least 40c per Mcf. before it goes into the distribution lines.

That is in the East. Now let us go down into Texas and Oklahoma where natural gas, with twice the heating value of water gas is going begging at 4c or 5c per Mcf. in the field. We know that there is enough gas there already proved up to last this nation for a generation, and probably enough in additional undiscovered reserves to give us a wide margin of surplus until that day when atomic power takes over to either run the world or blow it into eternity.

If the 5c gas from Texas, which has a 1000 Btu. of heat in it can be laid down in the East at any price under 80c, it would appear that it would have an advantage over manufactured gas of only half that heating value, in the holders at 40c per Mcf. As a matter of fact, natural gas pipe line men would regard as fantastic any suggestion that it would cost 80c to deliver Texas gas to the eastern states. Some estimates have been as high as 40c for the New England area, and some have been as low as 22c in and around New Jersey, but those are the extremes. If 22c natural gas is a possibility for some sections of the East, then par for the course as far as the manufactured gas researchers are concerned must be 530 Btu. gas at something under 15c including fixed charges. Even the optimists would be chary of admitting any possibility of attaining that low figure.

Now, we know well enough that in presenting this grossly undersimplified statement of the problem of cheaper gas for the East, we are overlooking many contingent factors that must be taken into consideration. Some of these will unquestionably operate to lessen the spread between the cost of manufacturing gas and that of bringing natural gas in. Questions of maintenance of uninterrupted service at the end of a line many hundreds of miles from the producing fields,—a line carrying gas at pressures up to a 1000 lbs.,—are real ones. Experience has already shown that interruptions to natural gas transmissions are so infrequent as to be almost neglible; but they must be anticipated and safeguarded against. The adequacy of reserves in the producing areas that can be dedicated to new pipe line projects has to be studied and a broad margin of safety for the forseeable future assured.

Techniques and costs involved in change-over of distribution systems and the adjustment of gas appliances and equipment must be anticipated and provided for in terms of men and money. The decision whether or not to retain existing plants as possible standby equipment,

and the fixed charges necessary in the rate base to insure their readiness for winter peak or other emergency demands, will become real and not hypothetical considerations once a shift from manufactured to either mixed or natural gas reaches the specific planning stage.

These are only a few of the many obstacles that lie across the path of natural gas expansion into this last logical major market that is available for its service—the Atlantic seaboard. There are also the political considerations potential within every state and community through which a gas transmission line might pass, and in every area where service might be inaugurated.

But there is not a single problem posed that is new. There is not an obstacle standing in the way that has not been surmounted or by-passed under similar circumstances by transmission lines into other sections of the nation. Where vision and dedication to genuine public service have combined they have never failed to bring this once wasted and despised resource into the homes and the lives of people who have reached eagerly for its comfort, convenience and good cheer.

We would not cast the slightest aspersion on the worthiness of the effort nor the validity of the objectives of the current research into gas production. Even if natural gas is introduced into the East, it is probable that many of the existing manufactured gas plants will have to be either kept in service or held available for standby production and to level out the winter peaks that will be encountered on the natural gas lines. Thus, any technical refinements in either machine or method will further improve the position of gas in the competitive market.

But we are convinced that technical research in gas manufacture might conceivably deteriorate into a myopic examination of a minuscule aspect of gas service were it conducted in an atmosphere that ignored or neglected the truth that no matter how cheaply water gas can be made, natural gas will probably be delivered cheaper.

Thus any honest research aimed at providing a better gas service at a more reasonable rate to the consumer, cannot be limited to manipulation of the bare techniques of gas manufacture. A thorough investigation of the economics and the politics of bringing natural gas into the East must be a companion subject of manufactured gas industry preoccupation. A knowledge and understanding of the problems encountered and solved in other areas should be accumulated and studied, against the day when they can be used to the advantage of service in this new market.

The obligation inherent in any elevated conception of public service is not to keep inviolate the traditional forms with which the service may presently be invested. It is only the ultimate good residual in the service that matters. Research that is to contribute toward that good must be research that is free to range far and beyond the borders of selfish and small prescriptions. No lesser concept can ever be judged worthy of the great gas industry.

Box Score

WITH the Oklahoma City phase of the Federal Power Commission's Docket G-580 investigation concluded, it is well for the natural gas industry to take stock of its position and count the ground that it has gained or lost to date as a result of the testimony that has been presented.

E. Holley Poe, consultant, who, with his staff, has been retained by the natural gas steering committee to coordinate the preparation and presentation of testimony relating to the industry's case, provided such an analysis in a recent paper prepared by him and now being circulated to executives in the natural gas industry.

Taking up two points that he regards as definite gains for the FPC, Poe points out that:

> "First, the hearings have practically blocked off all competition by other governmental agencies . . . for the right to even discuss legislation affecting the natural gas industry . . . A full investigation of the entire fuel energy resources picture by any special congressional committee is now highly improbable . . .
>
> " . . . second, the variety of evidence being presented . . . will supply the commission with some degree of weight and authority to bolster almost any conclusions that it may care to draw in making its recommendations to congress.
>
> "Third . . . to the extent that disgruntled small producers have been able to gain a platform to air their grievances against pipe line companies; the commission is able to present a picture of the industry as at war with itself."

The natural gas obstructionists who have been vociferously in evidence throughout the hearings have cause to feel some satisfaction with the way things have gone to date from their standpoint. On this score the industry consultant observes that the fact that the investigation was ever undertaken was in itself a victory for the enemies of natural gas. He also adds:

> "A source of further gratification to our adversaries lies in the intangible atmosphere . . . created by the hearings . . . wherein it is almost taken for granted that there is a need for additional regulation over natural gas. Thus the only unanswered question tends to be . . . who should be given the new authority . . . states or a federal agency."

There is, however, a brighter side to the picture in the opinion of the members of the Poe organization. The testimony of E. DeGolyer, geologist, presented at Kansas City, was accepted without much question as a fair appraisal of the natural gas reserves of the nation, and this estimate of proven reserves of 140 trillion cu. ft. in major fields only goes into the records. In commenting on this Poe says:

> "Thus the industry has, in a large measure, countered the propaganda of those who would urge stronger Federal regulation in a panic of apprehension over the future supply of natural gas."

Another industry gain was the fact that the utilities commission, the state regulatory and conservation bodies were obliged to come out in a definite and unequivocal stand against any move on the part of the FPC that would lead to encroachment on states rights.

In our opinion the natural gas industry's handling of its own interests in the investigation still leave much to be desired. The spectacle of intra-industry differences being aired in public testimony is definitely detrimental.

We have been advised that a complete case setting forth and substantiating the position of the industry is in preparation, and that this will be presented as testimony at some future hearing, presumably in Washington, D. C. We trust that as the hearings proceed, and the gravity of their implicatoins become more apparent to natural gas men, there will be evidenced a growing spirit of cooperation and a disposition to bury all differences in the interests of the future of natural gas.

Highlights

• FPC has denied petitions filed by intervenors, including the Baltimore and Ohio Railroad Co., Wisconsin Coal Bureau, Inc., National Coal Association, and United Mine Workers of America, for rehearing and reconsideration of the Commission's order of Sept. 7 which enables Wisconsin Southern Gas Co. to serve its customers with natural gas.

• Two hearings in FPC's natural gas investigation have been postponed: New Orleans, from Oct. 30 to Nov. 12; Dallas, from Nov. 27 to Dec. 10. In addition three more have been scheduled: Biloxi, Miss., Feb. 11; Chicago, Feb. 19; Charleston, W. Va., March 19.

• Hearing has been set by FPC for Jan. 8 on the application of Michigan-Wisconsin Pipe Line Co. to construct and operate a 1216-mile line from Texas to markets in the North Central States. The company also seeks to acquire a 140-mile line to be constructed by Michigan Consolidated Gas Co. Overall cost of the project, $70 million.

• September gas sales decreased 2% over a year ago, according to A.G.A.'s statistical bureau. The Association's new index number of utility gas sales (1935-39—100) was 163.6 for September. Sales for the 12-month period ended Sept. 30 totaled 25.58 billion therms, a 3.9% gain over the same period ending Sept., 1944.

• Frigidaire division of General Motors will soon bring out a complete line of kitchen cabinet equipment including base, wall, and utility cabinets and unit sinks of various sizes, constructed of steel with white enamel finish.

• Last month W. A. Robertson, chairman, Westinghouse Electric Corp., distributed to all Governors, Congressmen and Senators "A Proposed Labor Act," the purpose of which was to stimulate thinking and action towards legislation "To diminish the causes of labor disputes . . . to create a General Labor Board." Copies are available, no doubt, from Westinghouse Electric Corp., P. O. Box 1017, Pittsbrugh, 30, Pa.

• At the Oklahoma City hearing of the FPC Natural gas investigation, Elmer Capshaw, Oklahoma Commission engineer, estimated the State's reserves at 8.8 trillion cu. ft., enough for over 45 years at 1944 rates of withdrawal.

• Cooperation between utilities and the REA during the next three years should virtually complete the task of electrifying rural America, according to Grover C. Neff, president, Wisconsin Power & Light Co., Madison. REA with $300 million on hand can finance a program to reach 700,000 farms in a three-year period. In a similar period, the electric companies plan to extend service to 600,000 farms.

• New series in A.G.A.'s national advertising carries the caption, "Where Food Is Finest . . . It's Cooked with *G A S!*" Carried in *The American Weekly* (Nov. 11) and *This Week* (Oct. 7), which have a combined circulation of 15 million, the message reaches communities 85% of which are served by gas.

• The Supreme Court on Oct. 8 denied a writ of certiorari sought by Louisiana in the Memphis Natural Gas Case. Thus, Louisiana lost in its attempt to have the Court put its stamp of approval on the State's contention that the Federal government should restrict end use of gas.

• Hearings before a special Senate committee investigating petroleum resources on the disposal of the "Big" and "Little" inch pipe lines are scheduled for this month. The coal interests want the government to keep the lines. Both the Military and the Interior Department would like control. The Surplus Property Administration wants to sell. And natural gas interests would probably like to buy or lease.

• Production and use of liquefied petroleum gases, including separate fractions and mixtures of propane and butane, tripled during the past two years, PAW Deputy Administrator Davies disclosed Nov. 1.

• A new rate schedule filed by Colorado Interstate Gas Co., and acccepted by FPC, will reduce the company's revenues by 41%. Average rates per Mcf are sliced from 26c to 15c to customers served by the company's Denver pipeline.

• Southern California and Southern Counties Gas Co's., Los Angeles, have applied to FPC and the California Commission for permission to build a 214-mile pipeline to connect near Blythe, Calif., with a 720-mile line to be built by El Paso Natural Gas Co. Completion of the project would for the first time bring out-of-state gas into California.

• Pent-up demand for gas ranges is 4 million, according to American Stove Vice President S. E. Little. Output in the first normal production year will be about 3 million. American Stove plans to erect another manufacturing plant at St. Louis.

• A Committee on Natural Gas Reserves with N. C. McGowen as chairman, has been formed under the Natural Gas Department of A. G. A.

• Two utility groups last month returned to the 40-hour week, one of which placed in effect a 15% wage increase.

1,600 BHP IN ONE UNIT

A DEVELOPMENT OF GREAT IMPORTANCE for

New CLARK "BA-17" Gas-Engine-Driven Compressor, 1,600 BHP, pumping natural gas on pipe line of The Memphis Gas Company.

HIGH-PRESSURE PIPE LINE PUMPING— LARGE-SCALE PRESSURE MAINTENANCE

The most powerful gas-engine-driven compressor unit ever built is now in production and successful operation . . . the CLARK "BA-17".

This new Clark unit is designed for pipe lines and other installations where extra high pressure is required. It will deliver more horsepower per unit of space — and per dollar of cost — than any other gas-engine-driven compressor.

Available in three sizes: 5 Cyl. 1,000 BHP, 6 Cyl. 1,200 BHP, 8 Cyl. 1,600 BHP.

Wire, phone or write for full information.

CLARK BROS. CO., INC. • OLEAN, NEW YORK

NEW YORK, TULSA, HOUSTON, CHICAGO, BOSTON, LOS ANGELES, LONDON, BUENOS AIRES

CLARK

ONE OF THE DRESSER INDUSTRIES

SETS THE PACE IN COMPRESSOR PROGRESS

A.G.A. RESEARCH and PROMOTIONAL PLAN

Key to the Industry's Progress

By ERNEST R. ACKER

Chairman, Special Committee on Gas Industry Research and Promotional Plan
American Gas Association

THE gas industry is faced with a challenge which no industry could fail to recognize and to which no member of the industry can fail to respond. It is the challenge of changing economics, aggressive competition and, ultimately, survival of the fittest.

There is no need to review the economic factors, trends in public psychology and changes in governmental philosophy which threaten in varying degrees the future of each unit of the gas industry. They are known to all of us and are reflected in the negative attitude of the financial interests of the country toward the securities of straight gas companies, particularly in the manufactured gas field. It has been my recent experience that this attitude extends to the gas departments of combination companies, and puts us on notice that we face an uncertain financial future unless such departments can be put on a sound earnings basis.

Under all of these conditions of the past few years it became imperative that the gas industry be awakened to the need for prompt action in its own behalf, particularly in view of the uncertainties and potentialities of the postwar period. It is significant that the inspiration for this awakening came from the West Coast through the leadership of Paul B. McKee, president, Portland Gas and Coke Co., who convinced the officers of the American Gas Association that the industry could not refuse to give financial support to a nationwide plan for the advancement of its own interests. His call for action struck a responsive chord and the leaders of the gas industry have enthusiastically underwritten a broad program of research and promotional development designed to combat the forces which are limiting or opposing the industry's progress. These forces have been ably analyzed and presented to the industry by the Association's Post-War Planning Committee, and are the subject of continuing study by strong and highly specialized working committees of the Association.

Financial Status

The Research and Promotional Plan, as is shown in Table 1, contemplates an expenditure by the gas industry of $1,000,000 per year for a three-year period for research, national advertising and promotional effort in addition to normal Association activities financed through membership dues and to the portion of the National Advertising Program financed through direct contribution to that fund. Of this total additional amount, $600,000 per year is set aside for research, $200,000 for addition to the National Advertising Fund, and $200,000 for general promotional activities. The funds collected under the Plan are controlled by a Special Committee of the Association responsible to the contributing companies and having authority, under the general supervision of the Executive Board, to allocate funds to various A.G.A. committees for the purposes stated in the Plan.

The Special Plan Committee is deeply conscious of its responsibilities and will exercise extreme care to assure the wise and productive expenditure of the funds at its disposal. The Committee makes allocations only on the recommendations of four major committees of the Association—the Committee on Coordination of Research, the Production Research Committee of the Manufactured Gas Department, The Promotional Committee and the National Advertising Committee. These committees are composed of the best available talent in their respective fields, are broadly representative of the industry, and constitute the best protection to the industry against unwise requests for funds. It is contemplated that the funds to be provided under the Plan will be collected over a three-year period but will be expended for the purposes stated over such period as is consistent with proper timing and the selection of worthwhile projects. In accordance with this policy, the Special Plan Committee allocated during its first year of operation, ended September 30, 1945, a total of $443,116 as against total subscriptions of $1,075,330. The balance of $632,214 will be available for future expenditure for the purpose stated in the Plan.

Under the operation of the Plan the general funds of the Association are relieved of the large expenditure for research undertaken in recent years and to that extent are now available for the restoration of normal activities discontinued during the war and for the strengthening of other activities to meet the current needs of the industry. It is obvious that it was only through the curtailment of certain of its normal activities that the Association was able to finance the increased research programs of the past several years, prior to the initiation of the Research and Promotional Plan. This fortuitous situation cannot be expected in normal times, and I feel strongly that the general research work of the Association should be financed continuously in the future through funds collected for that specific purpose and not through funds provided by mem-

E. R. Acker

THIS RESUME of the American Gas Association's Research and Promotion Plan covers its present financial status, outlines the second-year program both as to research and national advertising, and gives in some detail the promotional features of the plan. Mr. Acker's address was presented before both the Pacific Coast Gas Association meeting in Del Monte, Calif. on Oct. 3 and before the A. G. A. Annual meeting in New York, Oct. 24 and 25.

bership dues. By this process adequate research expenditures can be assured by the provision of a continuing fund available for this purpose only and need not be limited in annual amounts to funds available through current receipts from dues.

Second-Year Program

Having outlined briefly the general background and plan of operation of the Research and Promotional program, I would like to present a high-spot survey of what has been accomplished to date and what is contemplated for the second year of operation of the Plan, which began on October 1 of this year. A full report will be submitted in the near future to all subscribing companies, but I welcome the opportunity to submit a preview of some of the features of the report at this meeting. The financial status of the Plan on the basis of subscriptions and allocations for the first two years of operation is summarized in Table 1.

Table 1 illustrates clearly the point in connection with the three-year collection period provided under the Plan as against a period of expenditure governed by proper timing and productive use of the funds. The figures alone, however, have little meaning without a knowledge of the use which has been made of the funds which they represent, and I would like to discuss briefly the work to date and future plans relating to the three main features of the Plan—Research, National Advertising and Promotion.

Research

The research work of the Association has been largely confined in recent years to utilization research in the domestic, industrial and commercial fields, and to a comparatively small amount of general technical research on distribution and transmission problems. The provision of additional funds has made possible the speeding up of domestic appliance research and the initiation of the first broad program of production research undertaken by the industry. It is notable that of the $350,000 per year provided under the Plan for this latter purpose, the natural gas companies have accepted an assessment of $90,000 per year in spite of the fact that they have only an indirect interest in the results. The balance of $270,000 is assessed against manufactured and mixed gas companies.

The stimulation of all types of research presents the possibility that patentable processes of value to the gas industry and to other industries may be developed, and immediately raises the question as to ownership and licensing of patents. In order to meet this issue on the broadest possible grounds and to avoid any implication of combination in restraint of trade, the Executive Board of the Association has adopted a statement of patent policy providing:

1. That it shall own and hold any patents which result from such research.
2. That it intends, in general, to permit the use of such patents royalty-free to all members of the gas industry for use in the production, transmission, storage or distribution of gas for, or utilization of gas by, the customers of the gas industry.
3. That it reserves the right to impose, if it seems advisable under special circumstances, reasonable license fees or royalties for the use of any patent by a member of the gas industry or of any other industry.
4. That any such license fees or royalties so imposed shall be used for further research work or for any of the nonprofit purposes of the Association. It is expected that a similar statement of patent policy will be adopted by the Institute of Gas Technology with reference to patentable processes which may result from research financed with its own funds. Patents resulting from research sponsored by A.G.A. at the Institute or at any other institution will become the property of the Association.

TABLE 1. FINANCIAL STATUS OF A.G.A. RESEARCH AND PROMOTION PLAN

	Assumed Under Plan	*Actual First Year*	*Estimated Second Year*
Total Subscriptions (Net additional amount)	$1,000,000	$1,075,330	$1,160,000
Research	*Allocations*	*Authorized*	
Production	350,000	175,506	524,494
Utilization	200,000	128,763	178,379
General Technical	50,000	26,200	40,500
Sub-totals	600,000	330,469	743,373
National Advertising	200,000	77,693	222,000
Promotion	200,000	40,240	200,000
Miscellaneous	.....	15,000	9,964
Totals	$1,000,000	$ 463,402	$1,175,337
Carry-over at Year End		$ 611,928	$ 596,591

Gas Production Problems

The Plan Committee has authorized during the past fiscal year a total of $175,506 for production research, the bulk of this expenditure having been assigned to the Institute of Gas Technology on the theory that it is in the best interest of the gas industry to build up and have available a strong research organization highly specialized in the particular problems of our own industry. Most of the projects assigned to the Institute are studies of fundamental problems, and considerable time and effort must be devoted to a study of the results obtained before they may be applied to practical operation. Among such projects is the study of existing processes for the catalytic gasification of hydrocarbon gases, particularly propane. As a result of the work at the Institute and of other members of the Committee, it has been established that several processes are available which may be used for the production of peak load gas from propane. These processes have been developed and used for the production of hydrogen and ethylene, and they require only minor modification for use by the gas industry. Firm quotations have been obtained from several engineering firms for the installation of such plants and the Gas Production Research Committee has recently authorized the purchase and operation of a small pilot plant in order that existing processes may be refined for use by the gas industry.

Members of the industry have been interested for some time in the possible use of oxygen for gas production. During the war the installation of oxygen plants has been greatly stimulated in other industries and the Production Research Committee has obtained reliable estimates from several sources on the cost of oxygen produc-

tion. The studies form the basis for two projects:

1. A laboratory study of the oxygen, steam carbon reaction at the Institute of Gas Technology.

2. A pilot plant investigation of the fundamentals of the water gas reaction at Batelle Memorial Institute. While oxygen is considered in these two studies, they are not confined to oxygen alone.

Many of the processes under consideration by the industry are catalytic in nature, and, inasmuch as most catalysts are easily poisoned by sulphur compounds, one of the projects placed at the Institute is a study of sulphur resistant catalysts and a search for new materials of this character.

The work of the Gas Production Research Committee involves additional studies by committee members which I will not outline here but which will, together with those already mentioned, require a considerable amount of field test work during the coming year. For this reason it is estimated that the full amount earmarked for production research will be required next year plus the carry-over from the year just closed, or a total of $524,494. The industry has a large stake in the work of this Committee but can be assured that the direction of the expenditures is in highly competent hands.

Future of Research

The Utilization Research of the Association has been organized and directed with unusual ability and foresight during the past several years, and has achieved a success which is recognized by gas utilities and manufacturers alike. The results of this research will to a large extent determine the ability of the gas industry to maintain the superiority of gas appliances as against the growing competition of other industries, and the continuation of this program is an essential part of the enlarged activities of the American Gas Association.

The Domestic Gas Research at the A.G.A. Laboratories involves principally appliance improvement research, including ignition, combustion, heat distribution, heat transfer, heat control, heat conservation, internal venting of appliances and kitchen ventilation. The current results of this research have been presented to the industry from time to time in bulletins issued by the Laboratories and have been fully reviewed with groups of manufacturers for incorporation in the designs of new appliances expected upon the completion of the reconversion period. Additional research projects have been assigned to the Institute of Gas Technology, Purdue Research Foundation, Batelle Memorial Institute and Case School of Applied Science. Expenditures for Domestic Gas Research during the coming year will be increased by approximately 25% over those of the past year.

The Industrial and Commercial Gas Research program includes projects on controlled vacuum heating, the application of forced combustion to commercial cooking and baking equipment, an investigation of plug-in flexible connections for gas appliances, improvements in non-ferrous metal melting through direct radiant gas heat, and so forth. Other projects under consideration will double the total expenditures for such research during the coming year.

Research on gas summer air conditioning has been continued during the past year under the joint sponsorship of the Domestic and the Industrial and Commercial Gas Research Committees. Funds have been allocated for two projects, (1) completion of the survey of water problems and (2) pressure losses in air ducts. It is contemplated that the latter project will be undertaken in cooperation with the American Society of Heating and Ventilating Engineers. The Summer Air Conditioning Committee has recently issued an excellent report entitled, "Technical Advances in Gas Summer Air Conditioning" and will continue its work during the coming year.

The program of General Technical Research has included five projects continued from previous years, (1) the control and gauging of combination wells, (2) investigation of natural gas hydrates, (3) mixed gas research, (4) organize sulphur research and (5) pipe corrosion research. Expenditures for these purposes will be increased 35% during the coming year.

Research is the lifeblood of progress. It operates in the realm of new horizons and broadened opportunity. It requires capable guidance, hard work and sound thinking. It is man-made and springs from a firm determination to seek and find the solution of the problems which confront us. The cost is high in time, effort and dollars but the goal is limitless and the reward is great. Let us have faith that the research program of the gas industry will merit the support of the entire industry and will lead us to new and enlarged opportunity.

National Advertising

During the past 10 years the National Advertising Campaign of the Association has been supported by a group of contributing companies which have financed annual programs varying from a minimum expenditure of $260,000 (1942) to a maximum of $473,000 (1940). Direct annual subscriptions to the fund now amount to $475,000. While the Research and Promotional Plan provides an additional $200,000 for National Advertising, the war limitations on magazine space made it impossible to expand the program during the past year to the extent contemplated in the Plan. For this reason the Plan Committee was called upon to allocate only $77,693 for this purpose during its first year of operation. This allocation, together with increased direct contributions, permitted the expansion of the program by 57% over the previous year and financed the return to four-color advertisements previously discontinued for lack of funds. The progress for the coming year contemplates an expenditure of $857,000 involving more insertions and more media than ever before. A total of 82 different publications will be used, 20 for domestic gas advertising and 62 for industrial and commercial advertising.

Highlights of the proposed campaign include, continuation of the New Freedom Gas Kitchen series, the addition of a new series on major gas appliances and on the superiority of gas cooking, and a greatly expanded industrial and commercial campaign providing vertical coverage in important fields and larger space in others. A supplementary series of ads will appear in the principal magazines catering to the architecture and building fields and to home economists throughout the country. Supporting publicity activities will be continued and work will be completed on the new booklet for consumer distribution which will be built around "New Freedom Gas Kitchens."

The new program will be financed by subscriptions of $475,000 from companies contributing directly to the National Advertising fund, supplemented by an allocation of $222,000 from the Research and Promotional fund and a contribution of $160,000 from appliance and equipment manufacturers who are participating in the

program for the first time during the coming year. A carry-over of approximately $100,000 will be available during the third year of the Plan to add to the $200,000 provided for National Advertising in that year. The operation of the Plan has made possible therefore, the adoption of an advertising program consistent with the size and importance of the gas industry, and, in the opinion of advertising experts, sound from the standpoint of the advertising value to be expected, as against the dollars expended.

Promotional Features

The promotional features of the Plan represent its most intangible element inasmuch as they involve principally the coordination of many different groups and agencies of the Association, and of the gas industry in a comprehensive and well integrated promotional program. The work of the Association in past years has been unusually effective as measured by the performance of other trade associations. It has been carried on with a high degree of cooperation within individual sections and committees and has served the purposes of the industry adequately within the scope of the funds made available for its support.

The Association is merely the creature of its member companies. It can do no more for its members than they wish to have done for them. For this reason the desire for enlarged Association activities must come from the industry itself and must be based on a real need for more direct and effective results. This principle applies with particular force to the promotional needs of the industry and the prompt underwriting of the Research and Promotional Plan is clear evidence of the expressed wishes of the majority of the Association membership.

The industry needs a well coordinated, over-all promotional program, keyed to the activities of the manufacturers and directly related to the promotional efforts of individual member companies. The Association has conducted many promotional activities in the past and has obtained productive results in a number of individual campaigns.

Promotional Bureau

It is proposed that in the future all such efforts be tied together and cleared through a Promotional Bureau to be established at Association Headquarters and charged with the responsibility of approving and coordinating all promotional work of the Association. The Bureau will act in an advisory capacity to Sections and Committees in the development of effective promotional plans for advertising, publicity and sales programs, will enlarge and coordinate the promotional work of the Association with all branches of the industry and of related industries, will foster and guide new product development and will promote market research and surveys. It will be operated as a staff function and will be supplemental to and available to existing committees and sections in an advisory and coordinating capacity.

The operation of the Promotional Bureau will be under the supervision of the newly created Promotional Committee of the Association which is now engaged in the selection of a highly qualified director to head the staff of the Bureau. In this connection it is significant that the new Managing Director of the Association, H. Carl Wolf, has long been recognized as one of the most able promotional leaders of the gas industry. For this reason he will provide unusually capable supervision of the new Promotional Director and will have an important part in the initiation and conduct of sales promotional programs. On the appointment of the new Managing Director, the Plan Committee agreed to underwrite $12,000 of Mr. Wolf's salary and this was a decisive factor in the determination of the total compensation which would attract a man of his caliber.

For the operation of the Promotional Bureau the Plan provides $100,000 per year. No allocations for this purpose have been made as yet, but it is estimated that during the coming year, the full amount will be required.

The Plan provides a further amount of $100,000 per year to finance the cost of developing and executing industry-wide sales promotional programs. These will include resumption of the CP range program, the development of comparable promotional programs for gas water heating and househeating equipment, the continuation of the New Freedom Gas Kitchens Program, the development of a program for the promotion of commercial cooking and baking, and the promotion of the general acceptance and distribution of gas appliances. During the past year allocations have been made totaling $40,240 for three promotional projects:—

1. The recasting of the Reference Manual on Modern Gas Service in promotional form. This Manual is for the use of architects and builders and will be available for sale to member companies shortly after November 1st.

2. Underwriting of the cost of preparation of a consumer booklet on New Freedom Gas Kitchens. Copies will be available for resale on November 15th and receipts will be credited to the Promotional Fund.

3. Financing the cost of conducting 20 to 30 Regional Meetings for the presentation of promotional plans and programs directly to member companies. These meetings are called jointly with the assistance of the regional associations, and have been enthusiastically received by the industry. The present series includes meetings to be held in Seattle, Portland, San Francisco, Los Angeles and Denver during the first two weeks in October.

The development of a fully integrated promotional program for the coming year will be undertaken immediately upon the selection of the Director of the proposed Promotional Bureau, and I am confident that under the careful supervision of the Promotional Committee the program will bring substantial benefits to the entire industry.

A collateral feature of the Research and Promotional Plan involves the restoration and strengthening of normal Association activities. In response to demands from many sections of the industry prompt action was taken during the past year on the establish-

TABLE 2. FINANCIAL SUMMARY—A.G.A. NATIONAL ADVERTISING FUND

Minimum Expenditure (1942)		$260,000
Maximum Expenditure (1940)		473,000
Annual Subscriptions to Fund		475,000
Additional Provided Annually by Research and Promotional Plan		200,000
Allocated by Research and Promotional Plan Committee for first year (1944-45)		77,693
Total expenditure contemplated for 1945-46		
1. From companies contributing directly to National Advertising Fund	$475,000	
2. Allocated from Research and Promotional Fund	222,000	
3. From appliance and equipment manufacturers	160,000	
Total		$857,000
Carry-over allocated for third year		$100,000

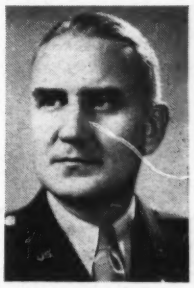
ment of a strong publicity Bureau at Association Headquarters through the engagement of George A. McDonald, former public utility financial editor of the New York Sun. The Bureau has obtained good acceptance of news items in leading newspapers and trade magazines and on national wire services. Among the items which have received wide national publicity is an article on the Postwar Outlook of the National Gas Industry. Most important among the accomplishments of the Publicity Bureau has been the periodic mailing of financial statistical data on the gas industry to 200 of the leading financial houses of the country. The Bureau is expanding this list to the 500 leading banks, insurance companies, investment trusts and others concerned with the financial operations of the gas industry. A monthly financial bulletin will be sent to these organizations presenting the progressive activities of the gas industry. The response to date has been excellent and the industry can be assured that the news of the Research and Promotional Fund has already had a decidedly favorable effect on the thinking of the financial world.

In further recognition of the current needs of the industry the Association has materially strengthened its Statistical Bureau which is now directed by Walter E. Caine, formerly Rate Analyst of the Federal Power Commission. The Bureau has been completely reorganized and has greatly improved its program of periodic reporting, including major revisions in reporting forms, instructions and the makeup of published reports. It will shortly be in a position to undertake special economic and market studies for use by the industry and financial institutions.

I feel that the Research and Promotional Plan represents the awakening of the industry to a new determination to face and solve its problems, the lifting of its sights to higher levels of opportunity and the beginning of an era of more unified action and greater joint accomplishment. I appeal for continued support of the Association and of its new Plan, and for active participation in the conduct of its activities.

Col. J. H. White Named Promotional Bureau Director

COLONEL JOHN H. WHITE, JR., of Rochester, N. Y., was appointed director of the newly-established Promotional Bureau of the American Gas Association, D. A. Hulcy, chairman of the Promotional Committee announced at the Association's Annual Meeting in New York, October 25. Col. White, who has been on active duty since February 11, 1942, will join the Association's headquarters' staff in New York on December 1.



Col. J. H. White, Jr.

The Promotional Bureau, which has been set up under the enlarged Gas Industry Research and Promotional Plan, will develop and conduct industry-wide sales promotional programs. It is expected to augment and coordinate the Promotional work of the Association with gas utility companies, appliance manufacturers and related industries.

A graduate of the United States Military Academy in 1923, the new promotional director resigned his commission shortly thereafter to go into business. He was active promotionally in the canning field, both regionally and nationally. After being associated with New York Canners, Inc., of Rochester, and the Birdseye-Snider Division of General Foods, for nine years he conducted his own canning business, the Hamlin Canning Co., Inc., of Hamlin, New York.

Col. White entered the gas utility business in January, 1934, when he was placed in charge of the Brockton office of the Rochester Gas and Electric Corp. While in that position he directed a number of outstanding sales campaigns, one of which resulted in his office winning the nationwide A.G.A. sales contest on automatic gas water heaters.

P. G. and E. Launches $100,000 Advertising Campaign

PACIFIC Gas and Electric Co., in behalf of industry, business, labor, agriculture and population growth in the vast territory it serves, will spend approximately $100,000 over the next six months in national advertising.

Breaking this month in national magazines, the campaign is believed to be the most extensive ever launched nationally by a regional public utility. It aims at selling industrial America on the proposition that northern California is the "industrial center of the new Pacific World"—"the gateway to a billion new customers"—the logical place to establish that western manufacturing plant.

In the nature of an experiment, the campaign starts with a series of six four-color page messages in Business Week, Forbes, The Saturday Evening Post, Time, United States News, and Wall Street Journal. If the response is good, the campaign probably will be extended beyond the initial six-months' schedule.

Paralleling the national promotion, a special phase of the company's regular advertising, is a separate, large-scale local merchandising campaign. All Pacific Gas and Electric's northern California territory will be reminded about the national business attracting campaign and urged to back the utility's efforts to hold northern California's position as the base of operations for the "Pacific World" in peacetime as it was during wartime.

Dominating the national magazine ads are colorful illustrations reproduced from oil paintings done especially for the campaign by such top-flight California artists as Maurice Logan and Michael Kady. Eye-catcher of the initial ad is a busy San Francisco harbor scene.

Important feature of all national ads is a box headline: "P. G. & E. engineers will help you and locate your plant." Copy states that a company engineering staff has been built solely to help industrial firms learn the facts about locating in northern California. Complete information and assistance is offered without cost.

A four-color brochure has been prepared for distribution to newspapers, chambers of commerce and civic and service organizations, outlining the national campaign and soliciting cooperation. Company officials at community offices have received a kit of promotional material, including copies of the national ads, for hand-outs.

BBDO is handling the national advertising campaign. R. H. Weisbrod, P.G.&E. ad copy chief, is responsible for the local merchandising campaign and prepared the brochure. Robert R. Gross is manager of the company's publicity and advertising department.

FPC NATURAL GAS INVESTIGATION

(Oklahoma City Hearing)

By O. D. HALL

Mid-Continent Editor

THE natural gas investigation of the Federal Power Commission at Oklahoma City, Okla., October 9-13, was devoted principally to testimony affecting production of oil and gas, conservation policies of the state, marketing practices and prices of gas at the well. Testimony was confined to witnesses representing the State Corporation Commission of Oklahoma, land royalty and gas well owners. Natural gas pipeline and distributing companies reserved their testimony for other hearings.

Nelson Lee Smith, supervising commissioner, FPC, opened the hearings with a statement which expressed satisfaction with results of the hearings at Kansas City and reiterated that while the commission has sought "information as to certain matters primarily of state and local concern, the Federal Power Commission has no desire or intention to extend its jurisdiction to matters properly coming within state regulations."

Kerr Statement

Governor Kerr, himself an oil operator, in an opening statement, commended this policy and declared that thus far there has been no conflict between State and Federal authorities concerning the production of oil and gas. The conservation and rateable taking of oil and gas can best be handled by the various states, since they are closer to the problem. Federal regulation of such production would nationalize these basic industries, lead to centralization and concentration of tremendous industrial and political power, and would be inconsistent with America's democratic form of government, the governor contended.

Reford Bond, chairman of the Oklahoma Corporation Commission, and chairman of Governor Kerr's gas investigating committee, declared from the witness stand his conviction that the Federal government should exercise its constitutional rights and the states their sovereign rights and that a Federal commission, far removed from the field of conservation enforcement, would "impair and hinder state government, increase regulatory expense, impose an unnecessary burden on the producer and consumer, create a conflict of power and authority and cause chaos and confusion."

A statement by the witness that it is the judgement of some learned lawyers that the power of the state to prohibit wasteful and inefficient utilization of gas applies to such use without, as well as within the state, brought questions from the coal and labor interests attorneys as to whether he meant by this that some Federal body should control end uses of gas. Chairman Bond replied emphatically that he did not favor such regulation but that wasteful uses outside the state could be controlled in Oklahoma by an order prohibiting production within the state of gas piped out of the state for uses which were economically wasteful.

There is no physical waste of dry natural gas in Oklahoma, Walker T. Pound, oil and gas conservation officer of Oklahoma testified. Reviewing conservation laws and commission orders since 1915, Pound declared that some of these had been considered as models in other states. He stated that while some gas produced with oil is being vented, such gas is serving the useful purpose of bringing oil out of the ground and that much of it is being converted into dry gas and going into gas pipelines.

Oklahoma Reserves

Testimony of Elmer Capshaw, gas engineer of the Corporation Commission, that known natural gas reserves of Oklahoma were 8,829,053 MMcf as of January 1, 1945, and that these reserves are sufficient to last the state for 45.5 years at present rates of withdrawal, without taking into consideration future discoveries of gas, were attacked by Tom J. McGrath, Washington, D. C., attorney for certain coal and labor union interests. He sought to show that actual reserves as estimated by other experts, were sufficient only to last a maximum of 28 years. Capshaw, however, stuck to his figures, stating that they were compiled with the asistance of a committee appointed by the gas industry at the request of the governor's committee, revised by himself, and backed also by records of the conservation department of the Corporation Commission.

Testifying as to future discoveries of natural gas, Dan O. Howard, petroleum geologist, of the Oklahoma Corporation Commission, stated that major oil and gas companies have 3,000,000 acres of land under lease lying in Western and Northwestern Oklahoma extending into the Oklahoma and Texas panhandles, and known as the Anadarko basin. Vast future discoveries of oil and gas in those regions are expected, the witness stated.

Oklahoma Development

Early in statehood, Oklahoma adopted the policy of fullest possible development and marketing of its natural gas, so long as the withdrawals of gas from reservoirs are in keeping with state and national concepts of proper conservation practices, Don C. McBride, chairman, Oklahoma Planning and Resources Board, stated.

Maps and statistics relating to dry and wet gas production and interstate gas pipe lines extending into Oklahoma were presented by Lawrence R. Alley, chief clerk, Oklahoma Corporation Commission.

Exhibits and testimony as to the many chemical and synthetic manufactured products of natural gas were introduced by George S. Cupit, Oklahoma State chemist. He stated that such uses represent only 1% of the total amount of natural gas marketed, but that there is a bright future for wide extensions of such markets.

Prices of natural gas at the well are altogether too low in the opinion of all witnesses who appeared representing the land and royalty owners. All of these agreed with statements of some witnesses for the state that adequate prices at the well head would be the greatest incentive to effectual conservation of the production, and sale of natural gas. Such testimony developed that prices at the well in Oklahoma range from 2c to 6c per Mcf.

Efforts of attorneys for the coal interests to secure admissions from such witnesses that they knew of alleged monopolistic practices by the pipeline companies, failed, but some

Left to right (background): Ross Rizley, Guymon, Okla., congressman, testifying; Harold Brandenburg, commission reporter; Harrington Wimberly, commissioner; Nelson Lee Smith, supervising commissioner; Marvin Farrington, examiner. General view showing some of the attorneys and newspaper reporters in court room.

of them expressed the belief that with only one or two pipeline companies furnishing marketing outlets to some of the wells, the effect was depression of prices at the well. They were unanimous in asking for more pipelines in Oklahoma, wider markets both within and without the state, and higher prices at the well.

Leading those who testified for land and royalty owners was Ross Rizley, Congressman, 8th Oklahoma district. He helped gas royalty holders in the Texas county (Okla.) sector of the Hugoton field to secure a permit for a carbon black manufacturing plant at Guymon, now operating which furnishes a market for some of their gas at 5 cents per Mcf. Other witnesses representing land, royalty or independent well owners included H. W. Long, Guymon, Frank Parkes, Hooker, Okla., and Vernon Taylor, San Antonio, Texas, president, Peerless Oil & Gas Co. The latter advocated complete divorcement of production from pipeline companies and bringing of the gas companies under terms of a congressional act similar to the Connelley "hot" oil act.

Sitting in the Oklahoma City hearings besides Supervising Commissioner Smith, were Harrington Wimberly, new FPC member and Marvin Farrington, examiner. Louisiana, Texas, Mississippi and Wisconsin were among states represented by official observers or attorneys. Officials and representatives of natural gas and oil companies and associations also entered appearances.

Supervising Commissioner Smith announced that the New Orleans hearings, scheduled to open October 30, had been postponed to start on November 12, in room 224, Old Post Office building. The Houston hearings are expected to open on Jan. 28.

Another Texas-to-Michigan Gas Line Sought

MICHIGAN-Wisconsin Pipe Line Co., newly organized subsidiary of American Light & Traction Co., has filed application with The Federal Power Commission for authorization to construct and operate a natural gas pipeline of ultimate 320,000 Mcf daily capacity from the Hugoton gas field, Hansford County, Texas, to markets in Missouri, Iowa, Illinois, Wisconsin, Indiana, and Michigan with an ultimate terminus near Detroit.

Estimate initial cost of the construction is $49,000,000, with additional construction during the first four years of operation bringing the total estimated cost to $70,000,000.

If approved, the main line will be 1216 miles in length, the initial construction being limited to about 1076 miles of the total length. Of the total, 816 miles would be of 26-in. and the remainder of 22-in. pipe. One 900-lb. compressor station in Hansford County and necessary lateral lines will also be included in the project. Additional pumping stations will be installed as required by load growth each year.

Initial capacity of the line out of the Hugoton-Panhandle fields would be 150,000 Mcf per day. In excess of 630,000 Mcf of gas daily could be supplied by the fully completed system through the use of the Austin and other gas storage fields in Michigan, now owned by Michigan Consolidated Gas Co. The Michigan Consolidated proposes to construct about 140 miles of 26-in. line connecting the Austin field with the Detroit area with a compressor station at the Austin field.

Construction is to begin about March 1, 1946 and the initial installation is to be completed on or before October 31, 1947.

The gas supply for the proposed pipeline would be purchased from gas reserves in the Hugoton-Panhandle fields in Texas and Oklahoma, owned and controlled by Phillips Petroleum Co., and estimated to be not less than three trillion cubic feet. Total sales for the fifth year of operation are estimated at 105,120,000 Mcf a year.

According to the application the purposes of the project may be summarized as follows:

1. To procure a supply of natural gas to permit Michigan Consolidated Gas Co. to continue to serve natural gas throughout the Detroit and Ann Arbor districts and to meet present and future demand;
2. To produce an adequate supply of natural gas to serve the districts in western Michigan served by Michigan Consolidated when the Michigan gas fields become depleted;
3. To provide natural gas for distribution in Milwaukee and Madison, Wis., served by Milwaukee Gas Light Co. and Madison Gas and Electric Co., respectively. Both companies are subsidiaries of American Light & Traction and both now serve their customers with manufactured gas.
4. To enable the public to enjoy gate rates sufficiently low to place the advantages of natural gas for house-heating within the reach of all;
5. To strengthen the financial position and future prospects of the operating subsidiaries, prior to the dissolution of American Light & Traction Company.

FPC Sets Hearing On Gas Supply Case

The Federal Power Commission has set hearing for January 15, 1946, concerning the lawfulness of proposed changes in conditions of service for the sale of natural gas by Cincinnati Gas Transportation Co., Charleston, W. Va., to The Cincinnati Gas and Electric Co. and The Union Light, Heat and Power Co. of Covingston, Kentucky. All three companies are Columbia Gas & Electric Corp. subsidiaries.

The proposed changes relate principally to the period for which service would be rendered. Twenty-year terms would be substituted for provisions permitting termination of service upon 6 months' notice. The proposed agreements may not be cancelled in less than 5 years from the date the purchasers first give notice to Cincinnati Gas Transportation Co. The FPC's order of September 15 suspended the proposed changes, except insofar as they related to the sale of natural gas for industrial use only, until February 18, 1946 and thereafter until made effective as prescribed by the Natural Gas Act.

HOW TO SIZE AND INSTALL

Automatic Storage Gas Water Heaters

How to Use the Water Heater Sizing Chart

IT IS generally recognized that hot water service in many homes in the past has been inadequate. If this trend is not halted, future hot water service will tend to be still more inadequate. This is because hot water usage should and probably will increase due to new and greater knowledge concerning sanitation, and to the temperatures of hot water which will be needed because of the wider use of automatic laundry machines and dishwashers in the near future.

The sizing chart, which this pamphlet discusses, has been approved by utilities, manufacturers and other segments of the industry. Use it in every sale! Be sure *your* customers realize the proper importance of an adequate supply of hot water in their homes and purchase heaters large enough to do the work required.

Basis for the Chart

1. The chart is based initially on the fact (generally accepted by the industry) that no heater of less than 30 gal. storage capacity supplies adequate hot water to meet normal average domestic requirements.

A. Automatic laundry machines require from 20 to 30 gal. of hot water in a period ranging from 30 minutes to one hour.

B. Many automatic dishwashers require hot water at the rate of 1½ to 2 gal. per minute, or 10 gal. per load.

C. Minimum quantities of 140° F water required for common tasks.

Use	*Gallons*
(a) Tub Bath	15.0
(b) Shower Bath (per minute)	3.0
(c) Laundry Washing Machine—one load (non-automatic)	12.0
(d) Single Rinse	6.0
(e) Dishes (manual)	3.0

It can therefore easily be seen that a 20-gal. heater with an input of 20,000 btu per hour heating water from 60° to 140° could not supply hot water for two tub baths at the same time. This heater can produce only 22.6 gal. of 140° water in an hour and thus any emergency or unusual need or any other need, for hot water could not be supplied without waiting for the heater to catch up.

2. The chart recognizes that the life of an adequately sized water heater with normal usage is much greater than that of an undersized heater which is constantly overworked.

Some manufacturers of automatic laundry machines, recognizing that most homes have inadequately sized water heaters, have recommended water temperatures of 160° F. to permit greater dilution and thus more water. Only in this manner can enough hot water be obtained from a too-small water heater to do a satisfactory job, but temperatures of 160° F. accelerate liming and shorten the life of the heater.

3. The chart is based on the capacity of the *house* rather than on the number of *persons* who may be occupying the house at any given time. This assures adequate hot water service for guests, changes of tenants, and emergencies.

4. The chart recognizes that the importance of hot water service justifies a size of water heater that will permit simultaneous use of the majority of hot water fixtures installed in a house.

How To Use the Chart

1. Use the proper approach in your store or in the field.

A. Inquire of the prospect the number of bedrooms and bathrooms in her home.

B. Find out about any unusual uses for hot water: number of children, etc. (In connection with the above inquiries, allow the prospect to talk about her home—stimulate her pride in it—show interest—compliment her.)

After obtaining all of the necessary information, show the prospect the chart. Be sure you make clear to the prospect that this is an "industry" chart. Point out the endorsements and stress the fact that these recommended sizes are based on many years of experience.

2. Select the proper size heater from the chart. If any unusual requirements exist, stress to the prospect that this is a minimum recommendation and step up one size.

THE PROPER SIZING and location of automatic gas storage water heaters is a particularly timely subject in view of the potential activity in the home building field. Up to this time, little has been done on this problem, but now the Pacific Coast Gas Association has produced a Sizing Chart (see page 27) which, if used by the industry as a whole, will benefit manufacturers, utilities, dealers and salesmen, but will especially benefit the users of automatic gas storage water heaters.

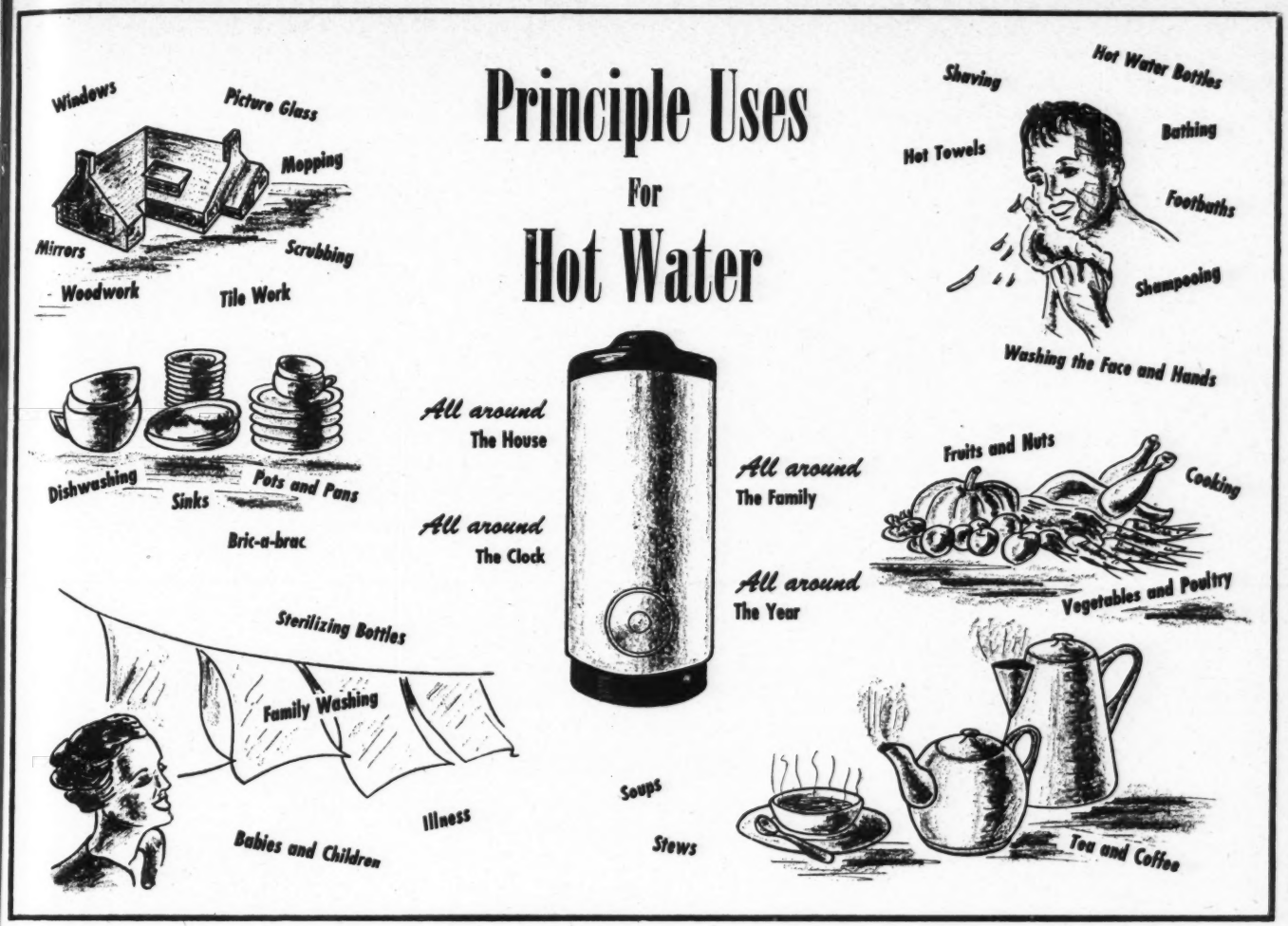
The work on this water heater project was started last January by the Water Heater Council of the Pacific Coast Gas Association's Sales and Advertising Section. The Chairman of the Council is Clyde H. Potter, Commercial Manager, Southern Counties Gas Co. and its Co-chairman is Claude Ballinger, Republic Heater Co.

The committee of the Water Heater Council assigned to the task had Mr. Ballinger as its chairman and included A. H. Sutton, Mission Water Heater Co.; W. R. Smith, Continental Water Heater Co.; H. W. Geyer, Southern Counties Gas Co. and J. E. Kern, Southern California Gas Co.

The spade work on the project was largely done by two sub-committees—one under the chairmanship of Arthur Dolan, Hoyt Heater Co., with Everett Todd, Mission Water Heater Co.; R. S. Felton, H. R. Basford Co., and R. V. Davis, of A. O. Smith Corp. as members, and one under the chairmanship of R. V. Davis, with W. L. Hoyt, Day & Night Manufacturing Co.; A. R. Combs, Southern Counties Gas Co.; J. G. Merkle, Southern California Gas Co., and Arthur Dolan as members.

The factual material and recommendations developed under these several committees are reproduced herewith. These cover the proper use of the Water Heater Sizing Chart, suggestions for location and installation of automatic storage gas water heaters, and suggested dealer displays.

This material on water heater sizing, locating and selling, which has been approved by the Pacific Coast Gas Association and the water heater manufacturers and which GAS is privileged to preview in this issue, will be distributed to the trade in pamphet form.—Editor.



None of this procedure should replace the "selling" of a water heater. After selecting the proper size of heater, a good sales presentation of the heater must be made. This brief pamphlet is not intended to be a guide to good salesmanship and therefore it does not treat with that subject. However, your presentation should stress continuously the importance of adequate hot water service and should include facts which will generate a greater appreciation of the service provided by a quality gas water heater.

Field men can use the chart to excellent advantage. They can make their own inventory and demonstrate to the prospect where hot water is needed and the demands of each plumbing fixture. Field men can make on the spot suggestions for obtaining better hot water service. They can and should recommend the best installation. This type of service will be appreciated and will be profitable.

Selling Obstacles

1. *"I've always gotten along with a 20."*

This might be handled in several ways. If the present "20" has had a relatively short life—point out that it was probably overworked. Find out if hot water usage in the home has increased or if there have not been occasions when they ran out of hot water.

2. *"It's more money than we want to pay."*

Point out the longer life which may be expected from an adequately sized heater. In some instances show the cost per gallon for the size the prospect wants to buy and for the one you want to sell. Usually larger sizes cost less per gallon.

3. *"We have no room for a larger size heater."*

If a good sales job is accomplished, you may be able to convince the prospect that the heater should be relocated or that slight alterations are all that is necessary.

4. *"Won't it cost a lot to operate?"*

Prospects should realize that it costs less in the long run to own a good heater, adequately sized, than a cheap heater too small, one that is being constantly overworked. The operating cost is very little if any more. It is not appreciably more costly to maintain 40 gal. of hot water than 20 gal.

Conclusion

The members of the Automatic Gas Storage Water Heater Industry have provided a real service to users of this equipment by making it possible for them to *know* what size water heater to purchase.

Utilities, Manufacturers, Dealers, and Salesmen have to provide sound information to their customers if they are to serve them properly. When, in addition to doing a good job, a dealer can make a legitimate profit and at the same time add another satisfied customer to his clientele, then the dealer has double reason to employ the tools making this possible. This sizing chart is such a tool—its everyday use means better sales.

Pointers on Water Heater Location and Installation

HOT water is the "priceless ingredient" that is so necessary to maintain personal cleanliness, health, domestic sanitation and everyday home comfort and convenience. Most of us have become so accustomed to the convenience of gas-heated water that we take its efficiency and economy for granted, and many times are likely to provide an inadequate space or installation for this 24-hour-per-day servant. The gas water heater, *if properly sized*, can and will provide a constant supply of fresh hot water if one follows a few easy suggestions.

Suggestion for Proper Location

Gas automatic storage water heaters should be located so that they:

1. Are central to hot water outlets for economy and maximum service;
2. Are accessible for servicing and to permit good housekeeping.
3. Have sufficient air for combustion;
4. Are close to suitable vent.

Water Heater Location

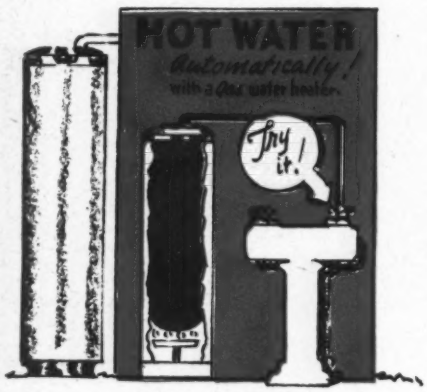
When you take into consideration the fact that 85% or more of the water used within the home is hot and that the water heater is a 24-hour-per-day servant, it is only logical that sufficient space should be provided to accommodate a water heater properly sized to meet the requirements of the individual home. Therefore, whether the water heater is to be located in the basement, utility room, back porch, or kitchen, ample space should be provided to permit an accessible installation. Remember that this automatic servant is mechanical, and while it seldom needs attention, its placement should be such that it is easy to light and service.

FLOOR SPACE REQUIRED FOR GAS AUTOMATIC WATER HEATERS

Size	Minimum	Maximum
30 Gallon	22" x 22"	30" x 30"
40 Gallon	24½" x 24½"	32" x 32"
50 Gallon	28" x 28"	34" x 34"
75 Gallon	31" x 31"	36" x 36"

Width x depth dimensions in above table show space required for enclosed water heater installation and include a

Some Suggested DISPLAYS For Dealers Featuring GAS Water Heaters



A live heater is connected to a lavatory. A diagrematical drawing showing a cutaway view of an automatic water heater with lights behind red cellophane which gives live action.

In this display the hot water heater is connected to the bathtub with a message on a panel behind the tub.

Another suggested display for live water heater connected to a lavatory. A cut out figure of a woman could stand at the right of the wash stand as shown.

A live water heater is connected to a laundry tray with an appropriate "laundry" background. Actual clothes could be hung on the clothes line as shown in the display. A real washing machine should be part of this display.

In this display the hot water heater is connected to an actual shower. Copy on the display emphasizes the economy of hot water automatically.

2 in. minimum space surrounding the heater.

Any A. G. A. approved gas automatic storage water heater having an insulated combustion chamber normally may be located within 2 in. of unprotected combustible material and within ½ in. of protected combustible material but the provisions of good local ordinance should be observed. Check actual floor space required for heater selected.

Where Automatic Gas Storage Water Heaters should *not* be:

1. Under stairs.
2. Small closed-in areas, unless fixed means of ventilation is provided.
3. Bathrooms and bedrooms.

All water heaters should be installed to conform with the respective state, city, or county plumbing ordinance. Where no plumbing ordinance is in effect, the following minimum installation requirements are recommended:

1. Locate the water heater as close as possible to the vent. Horizontal runs of vent pipe should be held to a minimum.
2. Provide or allow sufficient space to afford accessibility for inspection and adjustment.
3. Do not install a gas water heater in a bathroom, a bedroom, or any occupied normally closed room. When a water heater is installed in a normally closed room or compartment of less than 25 square feet in floor area, a fresh-air intake must be provided at or near the floor, and at or near the ceiling. Each fresh-air intake shall be at least 36 sq. in. in area.
4. Allow a minimum space of 6-in. from top of draft diverter to vent inlet.
5. Water heaters should rest on the floor. Elevated installations projecting into the attic are not good practice.

It is suggested that all water heaters should be vented in accordance with local practices and local ordinances. The size of the vent should not be less than that of the vent collar on the heater.

It is suggested that the hot water piping be the smallest pipe diameter consistent with adequate delivery of hot water. Too small a size will restrict flow; too large a size will waste heat. Where a water pressure regulator or check valve is used, a pressure-temperature relief valve must be included in the water piping installation. It is also recommended that a water shutoff valve be installed in the cold water line at or near the water heater.

A gas shut-off cock should be installed ahead of the water heater controls and ahead of the union.

If a water heater is located in a cabinet, free circulation of air must be provided by two openings (36 sq. in. minimum area, each) one in or near floor, and one in or near ceiling. Cover openings with grille or louvres.

A.G.A. Forms Committee on Natural Gas Reserves

R. H. HARGROVE, chairman of the Natural Gas Department, A. G. A., on Oct. 16 announced the formation of a committee to be known as the "Committee on Natural Gas Reserves." The function of this committee will be to prepare and maintain estimates of the nation's reserves of natural gas and will, it is predicted, provide a source of dependable information on this subject which will be of great benefit not only to the industry itself, but to the many related undertakings as well as to the consuming public and other interested persons.

It is contemplated that the work of this committee will be closely correlated with that of the Committee on Oil Reserves of the American Petroleum Institute (which has for many years been estimating the oil reserves of the nation) in order that there may be an interchange of information and findings by the two committees.

The committee will be composed of the following members, who constitute representation from all of the gas producing sections of the nation:

N. C. McGowen, Chairman, Shreveport, La., United Gas Corp.; Lyon F. Terry, Vice Chairman, New York City, The Chase National Bank.

R. M. Bauer, Los Angeles, Southern California Gas Co.; R. O. Garrett, Shreveport, Arkansas Louisiana Gas Co.; Charles C. Hoffman, Oklahoma City, Cities Service Gas Co.; W. T. Nightingale, Rock Springs, Wyo., Mountain Fuel Supply Co.; Perry Olcott, Houston, Humble Oil and Refining Co.; E. E. Roth, Charleston, W. Va., United Fuel Gas Co.; Paul C. White, New York City, Southwest Gas Producing Co.

In addition to the above named industry members, F. S. Lott, assistant chief, Petroleum Economic Division of the Bureau of Mines, will serve as a member of the committee for the purpose of coordinating the reserve estimates of the committee with the Bureau of Mines gas production statistics. Walter E. Caine, chief statistician of the American Gas Association, will serve as secretary of the committee.

An organization meeting of the committee will be held at an early date, at which time detailed plans for the work of the committee will be formulated. It is contemplated that publication of the initial estimates of the committee will be made some time during the year 1946.

California Utilities File on 214-Mile Line

SOUTHERN California and Southern Counties Gas Companies, Los Angeles, have filed joint application with the Federal Power Commission and with the California Railroad Commission for authority to construct a 214-mile natural gas pipeline at an initial cost of $12,140,000 to bring natural gas from West Texas field to serve the Southern California territory.

Gas for delivery through the pipeline will be purchased from the El Paso Natural Gas Co. at the California border, which company will construct 720 miles of pipeline from the Panhandle-Hugoton area of west Texas and the Permian Basin area of southeastern New Mexico and southwestern Texas where such gas will be produced and gathered.

The application of the two companies states that the pipeline in California will be 214 miles long and will have an outside diameter of 26 in. with an initial daily capacity of 175 MMcf and an ultimate daily capacity of 305 MMcf.

The project involves also construction of a 10,000 hp. compressor station at Blythe to pump gas to Santa Fe Springs, from where it will be distributed by the two applying companies. An additional 15,000 hp. plant will be required when the line is brought to ultimate capacity.

Southern California Gas Co. would pay 75% of the costs of the new pipeline and gas delivered through it and Southern Counties Gas Co. would pay the remaining 25%. The proposed pipeline would be owned and operated by the two companies as tenants in common. Gas received from the line would be distributed through the companies' existing distribution systems.

The application states the proposed pipeline is for the purpose of affording relief from a natural gas shortage in the Southern California area caused by heavy war demands. This gas will not replace any other fuel. It will only take the place of the declining gas supply.

It is anticipated the FPC will set a hearing on the application some time this fall.

TRAINING PROGRAM
for Gas Appliance Servicemen

No. 5. RANGE SERVICING

By C. C. WESTMORELAND

SURVEYS of the effectiveness of students in appliance servicing reveal that new men are more likely to leave mal-adjustments on ranges than on any other appliance. The same is true of experienced men but to a lesser degree. That fact may appear strange to the casual observer because range operation is relatively simple when compared to other types of appliances.

There are, however, several reasons why the range produces one of the more troublesome service problems.

1. The range gets more direct use and consequently more abuse from the customer than any other appliance. Most other appliances are used seasonably or operate automatically and require infrequent attention.

2. Poor housekeeping is reflected in the operation of the range to a larger extent than in other appliances. Frequently dirt, cooking fats, and general neglect are responsible for a large percentage of service calls on ranges.

3. Another fact to consider is the greater number of burner pilots and valves found on ranges which require attention, offering the serviceman more chances to "miss" than on most appliances. Even the simple old high oven models contain five burners and valves as compared to the single burner and pilot usually found on other appliances. In more modern models with multiple speed burners, automatic ignition, heat controls, automatic shut-off features and timing devices, it is easy to see how an appliance mechanic could fail to check an item needing attention.

Basic Training

The part of the basic training program devoted to ranges must necessarily be designed to fill two requirements if it is to be effective. Obviously the student should be equipped with the mechanical information necessary to correct improper adjustments. It is equally important that he should be encouraged to develop routines which will assure a reasonably complete survey of the points most likely to need attention.

Mechanical Information

Much of the "mechanics" section on this subject will be an extension of the points discussed under "General Principles of Gas Utilization" appearing in the October issue of *Gas* with specific reference to their application in range servicing. Burner adjustments, heat controls, automatic shut-off devices, and automatic ignition are typical items easily understood by new students who have received a sound foundation in fundamentals. Top burner adjustments which will concentrate the heat under the utensil and oven burner adjustments which will result in even heat distribution are not difficult to teach because the student has learned the advantages of various types of gas flames. Oven heat controls and automatic shut-off devices are not mysterious gadgets because rod and tube bi-metal and hydraulic elements have been explained. Specialized range accessories such as clocks and minute minders are new to the student and require specific attention.

Written material on this subject is easily obtained from a number of sources. Range manufacturers and manufacturers of accessories commonly used on ranges have service guides and other literature that may be obtained upon request. The American Gas Association Range manual is a particularly helpful source of material. It is well organized and can appropriately be used as the "textbook" for this section of the course.

Training props should include drawings, cut-away controls and accessories, manipulation boards containing operative sets of range accessories, and if possible, a few representative ranges. The number of complete ranges needed will be determined by the amount of field training scheduled to supplement the classroom training. Some provision must be made for the student to practice adjustments. If considerable supervised field training is conducted using the customers' equipment for practice purposes, the training equipment can be reduced proportionately.

Organizing the material into steps easy for the student to understand is important. In the early stages of training it is preferable to arrange the material on a "function" basis rather than on a "type of range" or trade name basis. The following outline taking up in sequence the cooking top, oven, and broiler is an example of organization which has proven reasonably effective.

I The Cooking Top

A. Top burner adjustments
B. Top burner ignition
   1. "Push-Button" pilots
   2. Automatic top burner ignition
C. Multiple speed burner adjustments

II The Oven and Broiler

A. Oven and broiler burner adjustments
B. Oven heat controls
C. Minimum flame adjustments
D. The "standby" pilot
E. Automatic oven pilots
F. Gas range clocks
G. Minute minders

As each sub-head is covered the basic principle is reviewed to relate the new subject with knowledge already possessed by the student. The operation is then demonstrated, each step being explained as it is performed. The students themselves then repeat the same operation on demonstration equipment several times under the observation of an instructor. In this way the subject matter is

1. Related to something the student already knows,
2. Explained and demonstrated.
3. Consolidated into the students fund of knowledge by having him perform the operation.

Development of Routines

The development of an effective routine for checking the operation of

various ranges should be encouraged as soon as possible in training. The establishment of work habits not consistent with Company policy and good work may be avoided if the importance of proper job routines receives constant attention in training.

Refinement of methods is often considered the final step in a training program. That view is, to an extent, true because the separate steps cannot be combined into an overall routine until the individual operations are mastered. For that reason the bulk of the emphasis on routines must be deferred until the student is ready to combine several minor adjustments into a complete unit of work. The value of correct sequence in the minor operations taught in the stages of training should not be overlooked. Even these minor operations consist of a series of short manipulations which can be arranged into an effective or ineffective routine. It is possible therefore to inject methods at an early point in the students experience. It has been noted that simple operations such as the adjustment of a single top burner can be broken down into individual steps and combined into different patterns which vary in effectiveness. Specifically the operation usually consists of three steps:

1. Cleaning the burner (mixer head and ports),

2. Adjusting the input, and

3. Adjusting the air shutter. If the cleaning operation is performed last, the other two operations often must be repeated.

In addition to teaching the right way the first time, early emphasis on method starts the student to thinking in terms of sequence prior to the time when he will be asked to combine larger steps into major operations.

It is in the later stages of a subject where emphasis on routine "pays off" best because incorrect sequence at that point often requires the repetition of lengthy adjustments. It is difficult in a "classroom" situation to develop a complete set of work routines applying to specific appliances but a general pattern can be established for groups of appliances. The Job Breakdown shown in Fig. 1 is an example of what can be done.

The work routines of students trained in this manner have been studied several months after their release. It was found that their job procedures were, in general, more uniform than older employees who had developed their own practices.

"Brushup" Training

The range, in common with other

FIG. 1. JOB BREAK-DOWN SHEET

Part: *Old or Outmoded Range.* Operation: *Check or Light-Up Trip.*

IMPORTANT STEPS	KEY POINTS
1. Purge through top burners.	1. a. Hold lighted match over burners while purging. b. Light oven burner. (1) Through flash tube, if present.
2. Test for leak at range connection if range recently connected.	2. a. Use of match o.k. when zero registration is noted on meter spot test and connection is not adjacent to wall opening.
3. Make preliminary check. A. And/or adjust oven burner while cold. B. Leave oven burner lighted with oven doors closed.	3. a. Remove pans, food, from oven. b. Check burner for correct air-gas mixture. (1) Should ignite readily through flash tube. c. Check input. (1) Flame should not impinge on oven bottom. d. Adjust if necessary. (1) Swab air mixer. (2) Ream plugged ports. (3) Adjust air shutter and input.
4. Check and/or adjust standby pilot, if present.	4. a. Check input and adjust if needed. b. Check location for proper ignition. Relocate if necessary.
5. Check and/or adjust broiler burner, if any.	5. a. Same as oven except sharp flame preferable.
6. Light and adjust top pilot.	6. a. If yellow flame pilot is used. (1) Adjust input. (2) Check location. b. If Rutz-type pilot, check input, vent opening and clean ports. c. If blue flame pilot: 1. Check for proper air-gas mixture. (a) If necessary, adjust for blue flame. (1) Blow out air mixer with tube. (2) Adjust air shutter. 2. Adjust input.. (a) Increase input. (b) Tap pilot assembly to remove foreign particles. (c) Lower flame to proper height.
7. Check and/or adjust top burners, griddle and simmers.	7. Execute the following operations as needed in the order given: a. Check for correct air-gas mixture. (1) Flame should be sharp but not blowing. (2) Griddle flame should be soft. b. Swab air mixer. c. Ream out plugged ports. d. Adjust air shutter. e. Adjust input. f. Check and/or adjust simmers as low as practical. (1) Simmer adjustments either in valve core under valve handle, or under sealed cap on side of valve, or as separate orifice on dual burner. g. If automatic lighting, check ignition from top pilot. (1) Be sure lighter slot or lighter port is clear.
8. Recheck oven burner while hot. Adjust if necessary.	8. a. Check minimum flame. Should be size of match head. Adjust if necessary. (1) Adjustment always found on body of control. b. If oven smothering. (1) Check vent for possible obstruction (steel wool, etc.) (2) Lower input to oven burner. (3) Increase primary air. (4) Check for oven burner or linings out of place. c. Recheck flame adjustment.
9. Clean-up and recheck top burner ignition.	9. a. Replace grates, pan and griddle. b. Check top burner ignition with aeration pans in place. c. If solid top, check that flames do not impinge or smother.
10. Check for missing or loose parts.	10. a. Order replacement of parts within scope of parts replacement policy.
11. Customer contact.	11. a. Explain any unusual condition. b. Answer any questions.

FIG. 2. JOB BREAKDOWN SHEET

Part: *Oven* Operation: *Preliminary Step in Calibration Procedure.*

IMPORTANT STEPS	KEY POINTS
1. Get story from customer and make preliminary analysis for probable cause of complaint.	Customer's story often discloses cause of complaint. Go ahead with following steps while getting story.
2. If Automatic Shut Off is present, check for operation and adjustment.	Do this first, before oven gets hot.
3. Check thermostat bulb or rod to be sure it is not touching oven lining.	1. Do this before the oven gets hot. 2. Check the oven for levelness. 3. Check oven door closure.
4. If a cold check point is marked on the dial rough check calibration.	It is desirable to have the oven as near 350° as possible when calibrating. A cold check indicates the approximate calibration of the control, and can be used in setting the dial so the oven will reach about 350°.
5. Check and/or adjust oven maximum flame and standby pilot.	
6. Check for active thermostat. Verify rocking point, and that rocking point progresses as oven heats up.	If the thermostat bulb has lost its charge or the theromstat is otherwise inactive, time would be wasted trying to make hot calibration.
7. Check and/or adjust bypass flame.	Check on true minimum flame.
8. Analyze for other possible troubles besides mis-calibrations.	

Note: Hot calibration is not worthwhile attempting on bi-metal controls and certain old rod and tube controls. An offer to prop those controls open, so that the customer may utilize the oven manually, will be made; together with an explanation of what manual operation of the oven will entail.

If the above steps do not isolate the trouble, follow hot calibration procedure as outlined in Fig. 3

FIG. 3. JOB BREAK-DOWN SHEET

Part: *Oven* Operation: *Hot Calibration Procedure* (Assuming Preliminary Checks and Adjustments are O. K.)

IMPORTANT STEPS	KEY POINTS
1. Place thermometer in oven.	1. Use thermometer base, Armored thermometer lags 10° to 15° even after 20 minutes, if base is not used. 2. Center in oven. Turn so that it can be read with flashlight from crack of oven door.
2. Set dial so oven will heat to 350°.	
3. Take first reading of thermometer 5 minutes after flame ceases to reduce on liquid controls, or 10 minutes on rod and tube controls.	1. On "CP" ranges, heating for 15 minutes will insure constant temperature if oven is near rated input. A second reading is not necessary. 2. Open oven door as little and as quickly as possible. Excessive opening may cause drop of 1° per second.
4. Five minutes after first reading, take second reading. Repeat readings at five minutes intervals.	On non-"CP" ranges, consecutive readings at five-minute intervals should agree within 5° to insure that constant temperature is attained. (Five-minute interval minimum.)
5. When constant temperature reached and dial varies more than 10° from thermometer, reset dial on shaft to correspond with thermometer reading.	1. Avoid moving shaft, this would change oven conditions and require waiting to reach constant temperature. 2. If shaft not moved and oven is between 300° and 400°, recheck at 350° not necessary. 3. If any doubt about movement of shaft, take check reading 5 min. later to see if thermometer and dial agree.
6. With dial and thermometer in agreement, *offer* to show customer thermometer reading.	1. This important step often convinces the customer and sells the job. 2. The customer probably can't read it very accurately, but will agree it reads what you said it did.

appliances, is an appropriate subject for "refresher" or "brushup" training designed to meet the needs of experienced service groups. Such training is usually conducted for one of several specific reasons:

1. To familiarize servicemen with new appliances or accessories.

2. To refresh the group's knowledge of appliances which require seasonal attention.

3. To correct a lack of uniform practices which are known to exist in the group.

Meetings designed to meet the first two objectives are rather common and conducted frequently in most companies. Steps taken to correct the third point, however, are not so common and are more difficult to organize and present effectively. First the weakness must be rather general in order to warrant the meetings. A detailed study of current practices is usually necessary to establish that point and to reveal the underlying reasons for the lack of uniformity.

The preliminary investigation indicates which point or points are questionable. The next step is to crystallize an alternate procedure which is acceptable to all parties concerned. Several points must be taken into consideration before the new procedure is definitely accepted.

1. Is it consistent with the general company policy?

2. Can the new operation be performed in a reasonable period of time?

3. Will the end results be consistent with the standards of quality established for the type of work?

4. Are manufacturer's viewpoints included?

After the proposal has been thoroughly checked and approved, the project should be studied to determine the most practical medium for presentation to the service group. A series of meetings conducted to change a current practice is the most difficult type to present because old habits must be overcome before the new procedure can be introduced. Such meetings should definitely provide for the "students" to practice the operations under supervision. The application of the knowledge cannot be left to chance occurrence in the field. The Job Breakdowns shown in Figs. 2 and 3, taken from the course outline conducted to correct oven calibration procedure, are examples of the detail necessary to assure even reasonable success in a meeting of that type.

CORROSION AND PROTECTION

Of Buried Metallic Structures

Compiled and Abstracted by GUY CORFIELD, Technical Editor, GAS

Electrical Examination of Pipeline Coatings

JOHN M. PEARSON, acting manager, Susequehanna Pipe Line Co., Philadelphia. Excerpts from an article, "Electrical Examination of Coatings on Buried Pipe Lines."

THE principles of operation which are used to locate holes in buried pipe coatings, from ground surface measurements without excavation, are summarized as follows:

1. An alternating current is passed from the pipe metal to the soil through the holes in the coating.

2. The locations of the "electrical leaks" are determined with suitable indicating apparatus and marked for excavation.

By proper use of the apparatus in examination of the leakage current paths it is possible to deduce that the coating is generally good with a few scattered holes or to deduce that the coating has become generally conducting. In the latter case, it is still possible to locate the larger holes through which considerably more than the average leakage current passes. It is usually easy to locate the end of a coated section by the same methods.

In the following, principles of operation will be explained and details of the apparatus will be given.

Flow of Current between Pipe and Earth Through Coating: For ordinary coatings the minimum practical requirements of alternating current has been found to be between .005 and .010 amperes at 1000 cycles per second. This can be furnished by a General Radio Co. microphone hummer or similar apparatus. Under average conditions between 1000 and 2000 ft. of coating can be tested on each side of the point of current application, the distance decreasing with poorer coatings and lower soil resitivities. If more exciting power is used the distances inspected are not much increased in proportion to the power but in the operating range of distances the sensitivity of the detector may be reduced to one-half each time the power is quadrupled. Increased power is occasionally an advantage where large amounts of stray current interfere with observations.

The 1000 cycle source is connected between the pipe and a ground rod 100 ft. away. The ground need not be very elaborate, a resistance as high as 200 ohms working quite well. The hummer is battery driven and should be reasonably steady in output.

All the curent circulated between pipe and ground rod must return to the pipe from the earth in only two ways.

1. Through holes in the coating.

2. As charging current through the electrical capacity between pipe and ground through the good part of the coating.

How the current splits up will, of course, depend upon how good the coating is as an insulator. At 1000 cycles or less, the conductivity of soil water in a very small hole in the coating will carry as much current as many square feet of good coating that is only 3/16 in. thick. The result is a concentration of current flow toward the holes, and their location is revealed by increased voltage drop in the soil due to this concentration.

The concentration of current at the holes produces the same voltage peaks in the earth no matter which side of the pipe is exposed in the failure. This fact is made use of in the method of detection which depends on measuring the voltage drop in the earth only, with no pipe contact.

The better the general condition of a coating, the more relative disturbance is produced by a small leak. This turns out to be an advantage since in a good coating the isolated failures are likely to be small and it is necessary to locate them more exactly in order to find them on excavation. Poorer coatings that have failed generally immediately reveal themselves as such, and under these conditions it is possible to locate the larger holes. Usually, in this case, inspection of the coating anywhere will reveal holes and the only failures of interest are the bad ones.

Detection of Holes: In order to locate the holes it is necessary to locate those points on the ground over the pipe where the leakage current has disturbed the earth-potential. This is accomplished by two men, one of whom carries the amplifier and indicating meter, the other man providing a reference ground connection. Each man has steel cleats on his shoes, connected in the first case to the amplifier shielding and in the second case to the amplifier input. This is illustrated in Fig. 1.

"B" listens to the amplified output and watches the output meter. This is necessary because of the various extraneous noises picked up. "B"

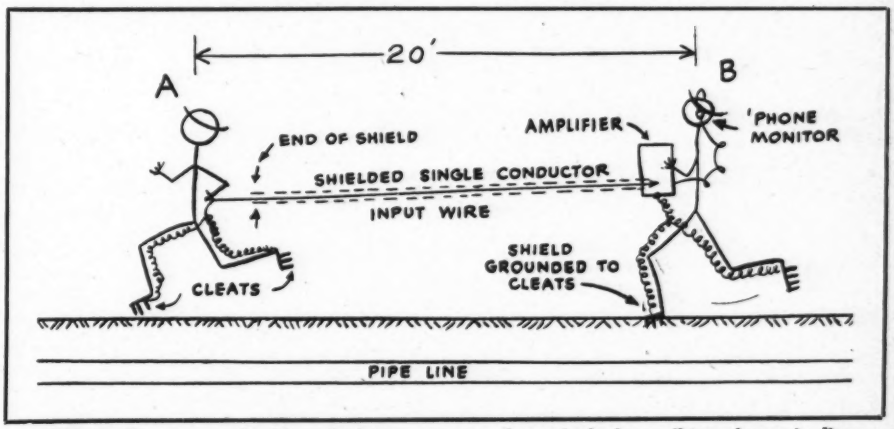


FIG. 1. Showing method by which two men can detect leaks by walking along pipeline.

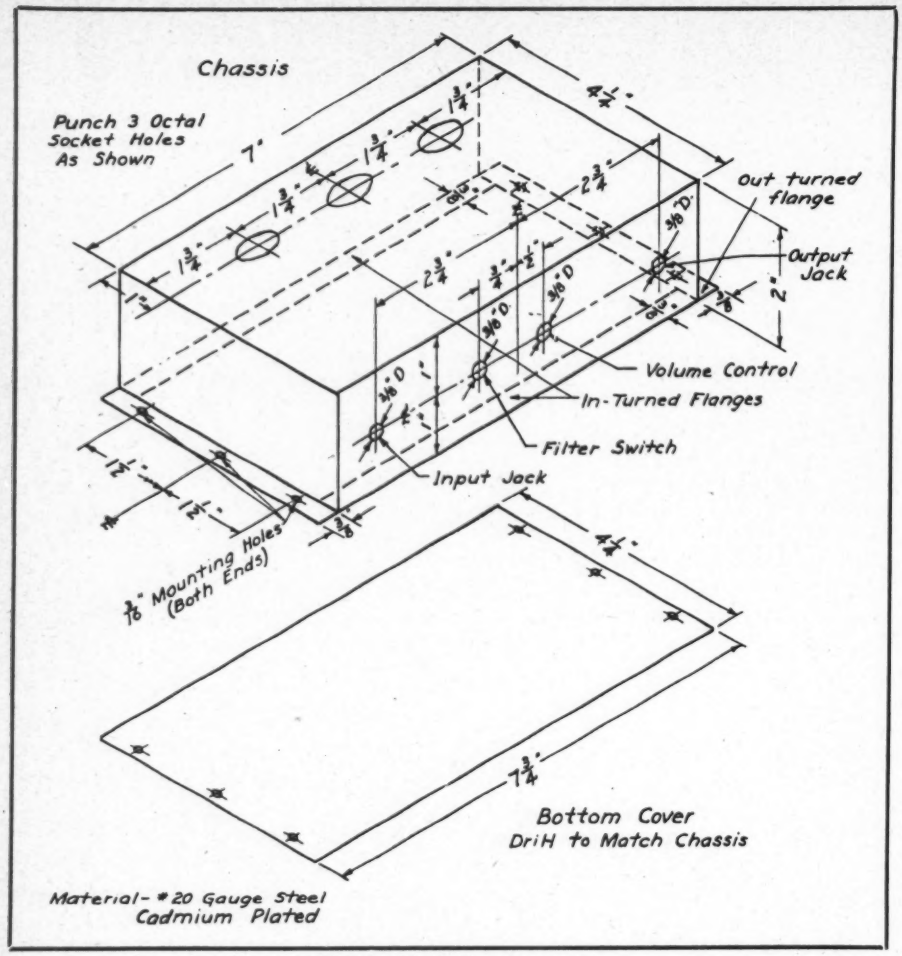


FIG. 2. Linefinder chassis.

must determine by ear if the kicks on the meter represent the 1000 cycle whistle or just incidental noises.

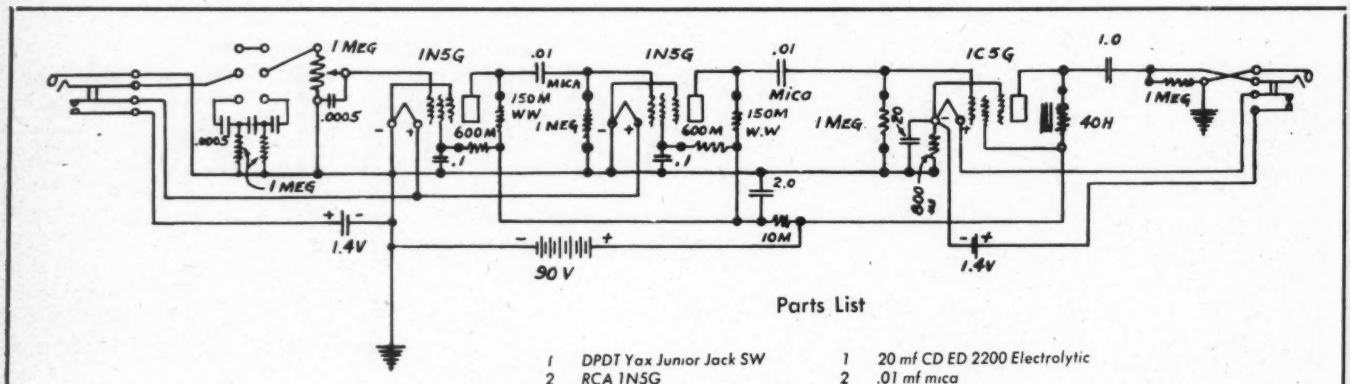
As the two men walk along the line, when "A" approaches a hole in the coating "B" observes the increasing tone and a rise in meter reading. This reaches a sharp maximum when "A" is just over the hole. As they proceed, the maximum is repeated when "B" is over the same place. The exact location can be determined if both men stop walking while "B" moves forward and back a few inches at a time to find the highest reading on his meter.

If a peak is observed when "A" is at a given spot, but not when "B" reaches the same spot this is due to the presence of two holes (about twenty feet apart, in this case). When this happens "A" should walk beside "B" with the wire at right angles to the line. This will introduce a weak tone due to the charging current for the good part of the coating, and the peaks are easily located by "B" as sharp increases in this tone.

Test for Isolated Hole: This test is a check on the presence of only one failure in over 40 ft. of pipe coating, a condition that is found on the better coatings or on some others when newly laid. "B" stands over the hole at the point of maximum reading while "A" walks around him, slowly, in a circle. If "B" is over a single hole in a generally good coating the meter will read nearly the same over the whole circle. At right angles to the line, the charging current increases the reading slightly, but the single failure produces a very symmetric nearly circular field of potential gradient.

Test for Generally Poor Coating: "B" stands over the line while "A" again walks in a circle. If the coating is generally poor the meter reading at right angles to the line will be high, and dip quite low as "A" walks over the trench. (If the line is bare the reading over the line will dip substantially to zero.)

In this case, the multitude of failures produce a current flow which is substantially radial from the line, all the potential gradients appearing on the surface at right angles to the line. When a coating is this poor it is usually necessary for "A" to carry the wire at right angles to the line so "B" can pick up the worst failures.



Parts List

1	DPDT Yax Junior Jack SW	1	20 mf CD ED 2200 Electrolytic
2	RCA 1N5G	2	.01 mf mica
1	RCA 1C5G	4	.0005 mf mica
3	Octal Sockets	1	1.0 mf CD 400V Tubular
2	Yax Jacks #703	1	2.0 mf CD 400V Bathtub
5	1 Meg IRC 1 Watt Type BT	1	10M IRC Type BT 1 Watt
2	600 M IRC 1 Watt Type BT	2	1.4V Burgess 4F
1	800 Ohm IRC 1 Watt Type BT	2	45V Burgess 30B
2	150 M IRC WW Precision Non-Ind.	2	Fil Bat Cable Plugs
1	1 Meg IRC Taper Vol Control	2	B Bat Cable Plugs
2	.1mf CD 400 Volt Paper	1	42h Thor. Choke T74C30
		1	Chassis per dwg. EA-74

FIG. 3. Linefinder and geophone amplifier.

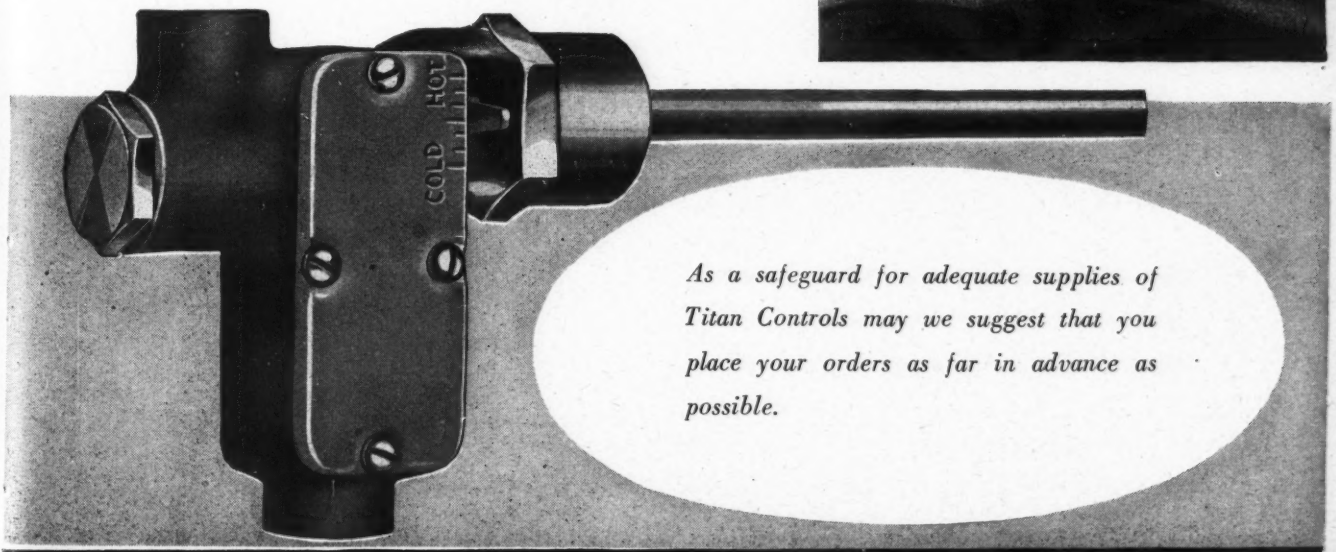
Old Faithful..

Yes, Old Faithful will spout hot water every hour—and you can depend on that . . .

But, a modern Automatic Hot Water Heater, equipped with TITAN CONTROLS, will deliver hot water **anytime,** for every household use—and you can depend on that, too!

The post-war demand for Automatic Hot Water Heaters is enormous. For satisfied customers be sure that your heaters are equipped with

TITAN
WATER HEATER CONTROLS



As a safeguard for adequate supplies of Titan Controls may we suggest that you place your orders as far in advance as possible.

THE TITAN VALVE & MANUFACTURING COMPANY

9913 ELK AVENUE • CLEVELAND 8, OHIO

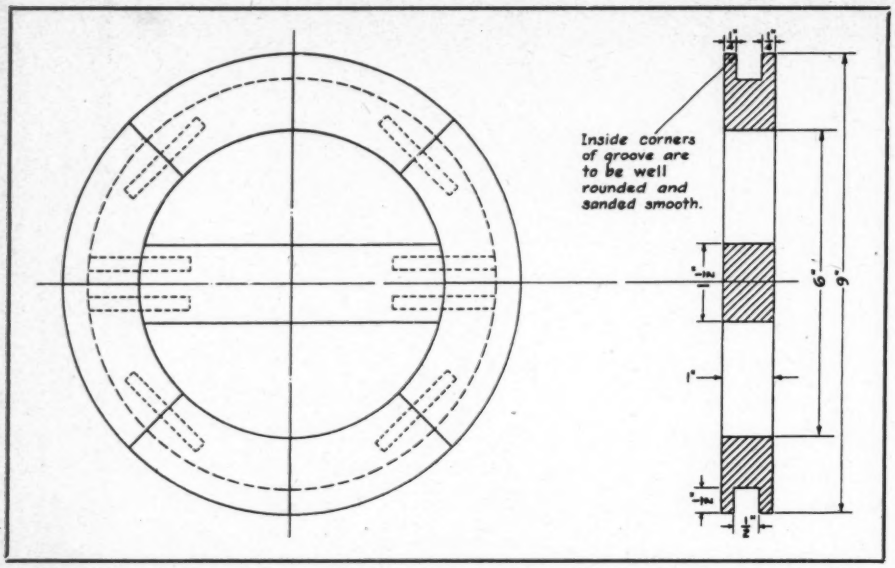


FIG. 4. Linefinder coil frame. Wood to be ash—thoroughly dried and seasoned. All joints to be doweled and glued. Grain of wood of each section to be parallel with the length of the section. The ½-in. sq. groove at periphery is to be sanded smooth with 00 (or finer) paper and is to receive one application of a first grade varnish.

Test for End of Coating: When "A" approaches the end of a good coating walking as in Fig. 1, "B" observes a rise in tone to a peak which lasts at nearly the same value until "B" reaches the end of coating. At this time the reading drops to zero when both men are over the pipe.

Line Location: In order to walk directly over the pipe it is usually desirable to mark the line location in advance so that both men can keep on line. This is conveniently done with a shielded induction pickup coil and the same amplifier.

With the hummer on, the coil is plugged in and held flat, with one side parallel to the ground. If the coil is moved from side to side of the trench, a very sharp minimum of tone is heard when the center of the coil is directly over the line. The line can thus be accurately located, and at the same time the distance at which the current becomes too weak can be approximately determined. It is usually convenient for "B" to carry the pickup coil and to locate the line as the inspection progresses.

Other Means of Excitation: When the observer knows that alternating current is flowing through the coating, it is unnecessary to use the hummer. This condition occurs in most cathodic protection installations that use unfiltered rectifiers (120 cycle ripple for single phase, 180 or 360 cycle ripple for 3 phase 60 cycle supply) or motor generators (commentator ripple).

In some cases stray 60 cycle power current is observable, but is not trustworthy unless the observer knows it actually is flowing from pipe to ground.

Examination of Excavated Coating: After the line has been excavated, the same hummer set-up can be used to locate the actual failure. To do this, the amplifier is grounded to earth, and the coating explored with the free end of the input wire. It is usually possible to get a tone anywhere on the coating when doing this, but the tone increases sharply when the wire is put near the hole.

An alternative method is to probe between earth and coating with an ordinary ohmmeter.

The holes which can be located in a good coating may turn out to be so small that they are located with considerable difficulty on the excavated line. In many cases there is no break in the coating, the electrical leak being due to flow of the coating away from a point of high stress, allowing the wrapper to contact the line.

In poorer coatings the failures are usually visible on inspection.

Apparatus: The amplifier which is suitable for this work should be portable and have a gain of 110-130 d.b. Figs. 2 and 3 show the chassis and the schematic wiring diagram. Plywood covered with fiber, like a trunk, makes a suitable carrying case.

In assembling the amplifier, the output choke should be mounted over the output jack, and the 2.0 microfarad condenser (isolating filter) should be over the input. The output meter is mounted in the carrying case and connected across the output jack. A 1000 ohm per volt, 0-5 volt Weston Model 301 rectifier type meter is most suitable. The meter wires should be shielded and each tube must be individually shielded. Shielded grid wires are run up through the chassis. All other parts mount on the socket terminals inside the chassis, the shielding being completed by the bottom plate. Brush crystal type high impedance telephones are recommended since they produce no magnetic field to interfere with the pickup coil.

The pickup coil frame and assembly are shown in Figs. 4 and 5 respectively. The winding consists of 20,000 turns of No. 40 enamel magnet wire, painted with National Coil dope during winding. The winding is covered first with one layer of cellulose scotch tape, then a protective cushion of cotton (chalkline) string is wound on. Next the coil is shielded by tin foil, insulated and over-lapped as shown.

The final covering of friction tape is applied and varnished. The copper handle serves to connect the operator to the shielding and to prevent feedback from his 'phones.

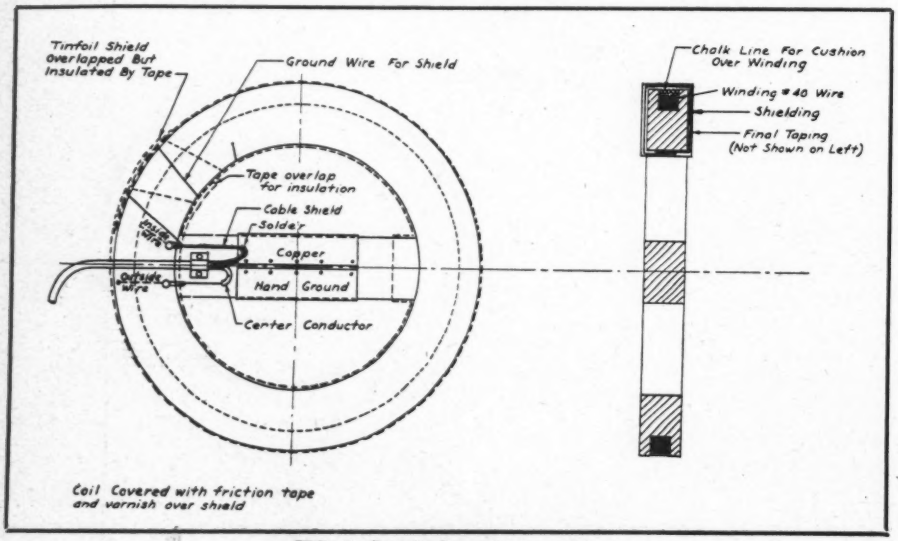


FIG. 5. Linefinder coil assembly.

50
YEARS
PITTSBURG
The
Water Heater
for
Modern Living
MODERN because its sleek beauty is as streamlined as the latest style home or newest skyscraper . . . Modern because its performance is precision-built and its ability to give long service is as new as fifty years of practical research, experience and craftsmanship could make it.
PITTSBURG is built for modern living—and modern selling. For greater sales and greater profit sell PITTSBURG!
Available in models for all types of gas or electricity.
Pittsburg
WATER HEATER CORPORATION
PITTSBURGH, PENNA

All tools should be cleaned thoroughly after using, to promote good housekeeping practices and long life.

HOW TO "P

By the Proper USE

LIKE Siamese twins, safety and the proper use of tools go hand in hand, as shown in these pictures from "Gas News," published by Peoples Gas Light and Coke Co., Chicago. For all practical purposes they are inseparable. It is not pure coincidence that the proper way and the economical way to do a certain job, with certain tools, is also the safest way.

Many tools used in the gas business have served a short term of usefulness after being applied to tasks for which they were never intended.

All tools which are made for heavy usage are subject to wear sooner or later. Even objects constructed of the toughest steel, such as chisels, drills, and cutting tools, occasionally require reconditioning treatment to keep them in working order. Most tools can be rejuvenated if turned in before they reach the "junk" stage.

Five Factors Considered

The proper use and care of tools is one of several factors being considered by the judges in rating the supervisors who are competing in the Peoples Gas Operating

A metal hardness test after repaired tools have been heat treated to insure their ability for hard use.

Misuse of pipe wrench—larger wrench or pipe extension on handle should be used.

Heavy sledge used on small chisel resulting in mushroomed and bent tool.

Prevent" + ACCIDENTS

USE and CARE of Tools

Division's Supervisors' Safety Contest. This one factor is divided into five separate groups as follows:

1. The proper tool for the job.
2. The proper use of the tool.
3. Good housekeeping.
4. An adequate supply of tools on hand.
5. Defective tool procedure.

Twins of Safety

To summarize the points covered, it can be emphasized that every tool is made for a certain job, and it is safe to use it for that purpose if handled properly. Indeed, safety and the proper use of tools are the Siamese twins of the gas business. One can't go very far without the other.

Remove batteries from flashlight before storing to prevent corrosion in the case.

Screw driver should not be used as a chisel, the wrong tool for the job—accident.

Shovel doing the job of a crow bar, resulting in damage to the shovel and possible injury to individual.

RAISING THE ROOF WITHOUT GETTING IN A JAM

Remember how tough it was to make a collapsible drinking cup telescope shut if one section got out of round?

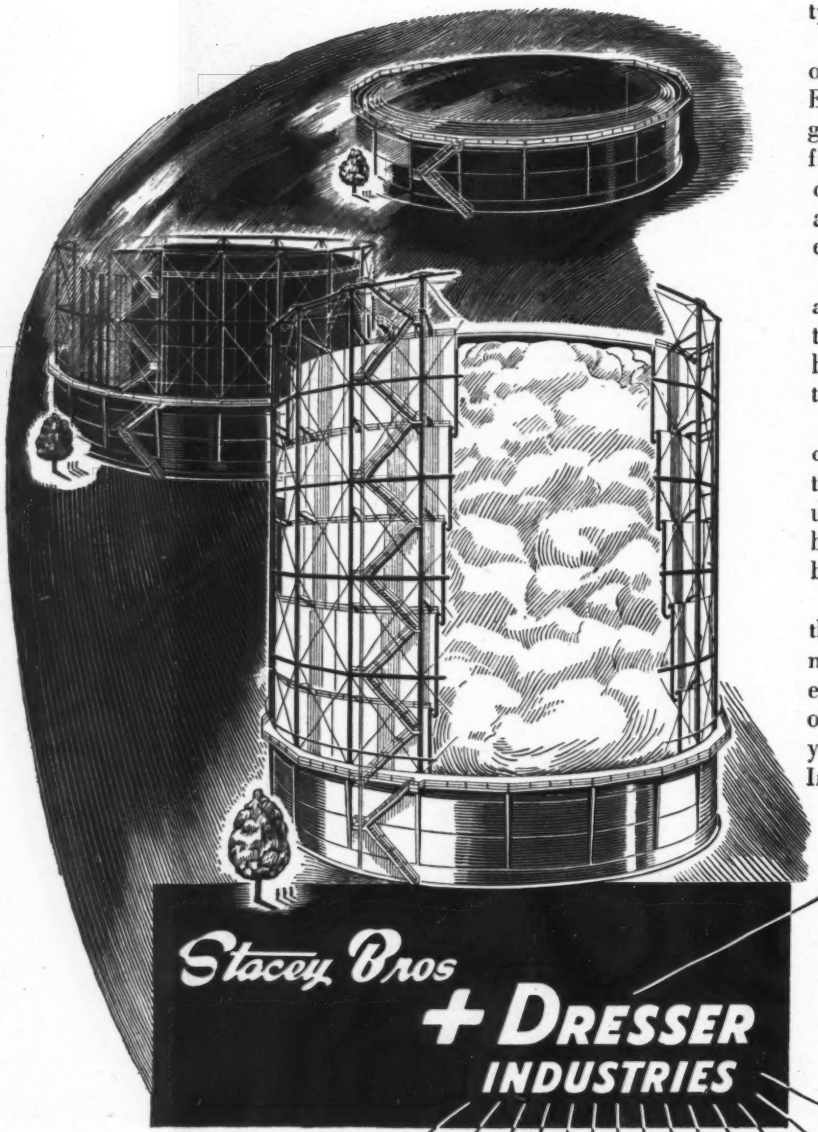
What a job you'd have with a telescoping structure 640 feet in circumference! The five million cubic foot, all-welded, wet-seal gas holder, for instance, now being engineered in California by Stacey Bros. Gas Construction Co., one of the Dresser Industries. It's the largest of this type ever designed for all-welded construction.

The sections are being built, one inside the other, like a huge drinking cup upside-down. Each section must slide up and down with the gas volume. But the sections, coupled by a water-filled device can have only four inches clearance on a diameter of over two hundred feet! That's actually fine precision, if you take a giant's eye view.

The sections are made of steel plates. Unavoidably, welding causes the steel to buckle yet the plates have to be welded on both sides. If the buckle becomes bad enough it can jam two sections when the roof of the holder is raised.

Engineers of Stacey Bros. said why not weld only one side of each section on the ground; then devise a means of getting the whole holder up in the air in finished position with the first buckles ironed out and the true roundness held before completing the job of welding.

This, Stacey Bros. engineers accomplished and the method of erecting holders is so unique it's now patented, one of many strokes of creative engineering that have given Stacey Bros. an overwhelming majority of contracts. Whenever you think of any member of Dresser Industries, Inc., think of *Creative Engineering.*



Stacey Bros + DRESSER INDUSTRIES

THE PLUS OF
DRESSER INDUSTRIES

Back of every product of every member of the group of companies stands Dresser Industries, Inc.—strengthening the resources; co-ordinating and stimulating engineering, production and distribution for its member companies. This is the Plus of Dresser Industries. To customers of every Dresser member this Plus is passed on through the products they buy—a Plus Value.

Dresser Industries, Inc., Terminal Tower
Cleveland 13, Ohio

BOVAIRD & SEYFANG Manufacturing Co. Bradford, Pa.

BRYANT Heater Company, Cleveland, Ohio

CLARK Bros. Co., Inc., Olean, New York

DAY & NIGHT Mfg. Co., Monrovia, Calif.

DRESSER Manufacturing Div., Bradford, Pa.

DRESSER Manufacturing Company, Limited Toronto, Ont., Canada

INTERNATIONAL Derrick & Equipment Co., Columbus, Marietta & Delaware, Ohio; Beaumont, Texas, Torrance, Calif.

KOBE, Inc., Huntington Park, California

PACIFIC Pumps, Inc., Huntington Park, Calif.

PAYNE Furnace Co., Beverly Hills, Calif.

ROOTS-CONNERSVILLE Blower Corporation, Connersville, Ind.

SECURITY Engineering Co., Inc., Whittier, Calif.

STACEY BROS. Gas Construction Company, Cincinnati, Ohio

VAN DER HORST Corporation of America, Olean, N. Y. and Cleveland, Ohio

TWO-WAY RADIO
Its Use in Gas Transmission

By LUCIEN C. BOMAR

Radio Engineer, Southern Natural Gas Co., Birmingham, Ala.

RECOGNIZING the value of radio contact between field repair parties and the general office dispatchers, Southern Natural Gas Co. constructed its first two-way radio station in 1941. Successful results obtained from the operation of this first station prompted the company to construct additional stations near Birmingham and Atlanta and to increase the number of radio equipped cars. This article by Mr. Bomar, which describes in general the installation and equipment and its use, is reprinted from the Southern Gas Association Progress of August, 1945.

PRIOR to 1941 Southern Natural Gas Co. dispatched its Gas load and emergency repair crews by means of its telephone system and commercial communication service. The inadequacy and unreliability of these means of communications, particularly during storm and flood periods, had long been recognized because of broken telephone lines, damaged submarine cables, and busy circuits which interfered with necessary instructions for proper operation of compressor stations load dispatching and delayed emergency pipeline repairs.

The principal advantages of radio-equipped cars, trucks, and dispatching office are summed up in Table 1.

These advantages, made possible by radio, assure more efficient operation continuity of service to the public, and greater protection to life and property.

The need for a radio wave band for utility emergency service was recognized by the Federal Communications Commission who, prior to 1930, allocated frequencies of 2726 kc. and 3190 kc. for fixed, land, and portable stations to operate with a maximum power of 1000 watts.

Following experimental work in the early 1930's, a group of power utilities appeared before the Commission in 1936 and requested the allocation of 16 channels for use on the basis of demonstrated need for the protection of life and property and for continuous public service. Today, as a result of the commission's most recent allocation, there appears to be ample frequencies available for all types of utilities.

The Federal Communications Commission has in the past indicated its interest in the valuable public services rendered by the use of special emergency radio service operated by utilities and has issued a General Information Release from Washington, D. C., dated January 22, 1940, which is quoted in part as follows:

> "There is one class of radio station authorized by the Federal Communications Commission which, though little known, is playing an increasingly important role in the economic life of the nation. This particular type of license covers special emergency stations. These stations have already demonstrated their value in time of localized stress, and now loom as a valuable adjunct to the linking of communications for widespread protection of life and property."

Southern Natural Gas Co.'s management believed that two-way emergency radio communication would provide a very valuable addition to the company's dispatching system, especially in establishing contact between repair parties and the general office dispatchers, and in the early part of 1941 construction was started on a special emergency two-way radio communications system.

Two Temco portable-mobile units were installed in operating vehicles in the company's Wetumpka, Ala., District, in which district the company has not installed a telephone system, and a third unit was added a few months later. These portable units are of 25-watt output power and operate on 2726 kc. from the storage battery of the car. The receivers are mounted on the fire-wall of cars and trucks, and the transmitters in car trunks and in a special metal box in back of truck cabs. The transmitter circuit is of conventional amplitude modulation design, incorporating crystal control, gene-motor power supply, and remote operation by the use of push-to-talk microphones.

TABLE 1. ADVANTAGES OF RADIO CONTACT BETWEEN FIELD AND DISPATCHING OFFICE

1. **Promptness in reporting line breaks, breaks, or other emergencies.**
2. **Replacement by radio of disrupted wire service for load dispatching.**
3. **Efficient control and direction of field personnel and equipment during emergencies.**
4. **Prompt contact with field operating personnel where other adequate means of communication are not available.**

The portable units are housed in a metal case 12 by 18 by 9 in. The installation, requires that connections be made to the transmitting antenna and car storage battery.

The receiving sets were manufacturned by the Karadio Corp. and are crystal control nine-tube superheterodyne circuits. The crystal control operation prevents the sets from drifting off the desired frequency. These sets are of two-piece construction, consisting of a receiver with its companion speaker.

The range of these units is 20 to 25 miles from car-to-car. Their operation is satisfactory and provides excellent communications between line crews engaged in emergency pipeline repairs or maintenance, particularly where other communication facilities are inadequate. With this preliminary experimental step accomplished, it was decided to link the mobile units to the distant headquarters at the Wetumpka Warehouse. There the first fixed two-way station was constructed late in 1941.

This station comprises a transmitter designed and constructed by the Collins Radio Co. The complete transmitter is housed in a metal cabinet, 14 by 20 by 60 in., except for the microphone and transmitting antenna system. The antenna system manufactured by the Windcharger Manufacturing Corp. consists of a 100-ft. vertical tower to which is added a ground bed of approximately 2 miles of copper wire.

The normal sending range of the Wetumpka Station is 150 miles and the talk-back range of the two-way units is 35 to 50 miles.

The company owned vehicles equipped with two-way sets were augmented by equipping a number of company cars with receiving sets only, so certain supervisory personnel could keep posted as to the locations and activities of repair parties.

The satisfactory results obtained through the use of the radio equipment installed in the Wetumpka District Station led to the subsequent construction of stations near Birmingham,

Ala., and Atlanta, Ga., the former being operated by the general office dispatchers and the latter by the Atlanta district personnel.

Later, 14 additional company-owned vehicles in Alabama and Georgia operating districts were equipped with 50-watt portable two-way frequency modulation units operating on a frequency of 39,660 kc. Frequency modulation receivers were also installed in the Wetumpka and Atlanta stations.

The F-M (Frequency-Modulation) two-way units were designed and manufactured by the Galvin Manufacturing Corp. These units consist of an eight-tube transmitter and a 13-tube receiver. The two units are mounted on identical chassis approximately 15 in. long, 9 in. wide, with an overall height, with the dustcover in place, of 12 in. The transmitter and receiver incorporate crystal control to ensure the circuits operating on the proper frequency. These units are designed with quick-change plugs and cables to simplify servicing.

The antenna is of special design, made by the Galvin Manufacturing Corp., consisting of a whip, cut to the specified operating frequency, mounted on a spring base on the roof top of the vehicle, which enables the whip to strike low hanging objects without being damaged while the car is in motion and the whip may be hooked down while the car is garaged.

A high point near the City of Birmingham was selected and a remote receiving system was erected and connected with the Birmingham station. This remote location, known as Pilot Knob, is 1340 ft. above sea level, 740 ft. above surrounding country and commands a view of some 20 odd miles. The equipment is housed in an 8-by-10-ft. tile building. The antenna associated with this location is mounted on top of a steel pole 100 ft. above ground. This control point, due to its elevation, provides a talk-back range of 50 miles.

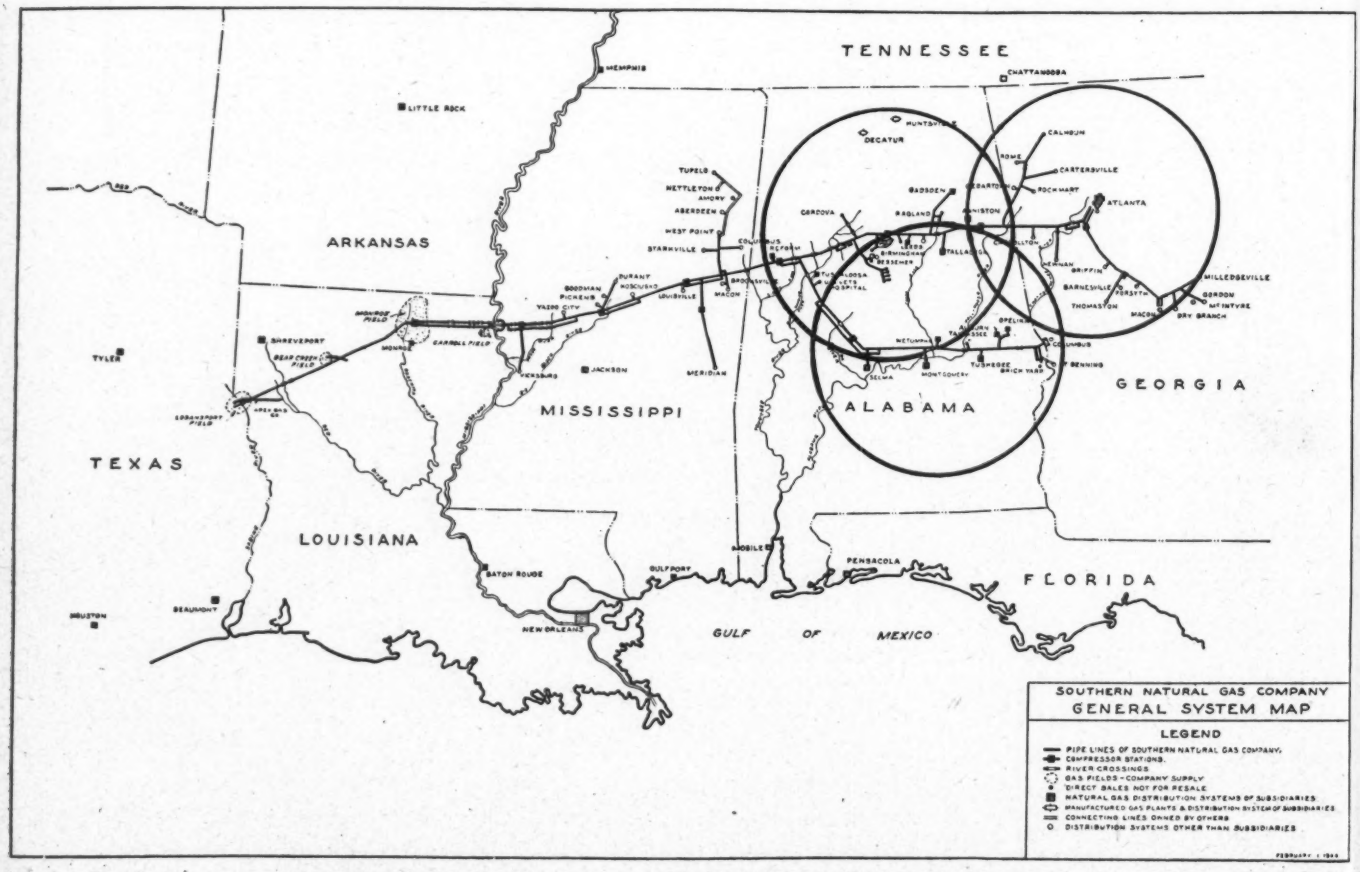
Reliable Equipment

With F-M equipment, two-way car-to-car contact is reliable under all weather conditions up to 35 miles and in "picked point" locations up to 70 miles. Interference by static seems to be a thing of the past.

As soon as war restrictions permit, the company will probably replace its presently installed A-M equipment with F-M equipment in order to obtain the more desirable operating characteristics of frequency modulation, such as increased coverage and clearer reception during adverse weather conditions, seasonal changes and local interference from power substations and transmission lines, all of which seriously affect the range and clarity of A-M equipment.

Several instances which demonstrate the practical value of the radio equipment which the company now has installed follow:

In the spring of 1942 one of the Coosa River lines in the Wetumpka district was broken during a flood period. The automatic pressure drop alarm indicated the break to the operator at the district headquarters and he quickly contacted the district superintendent, who was away from headquarters, by radio, informing him of the emergency. The alarm system indicated that the break was west of district headquarters. Two parties with radio-equipped trucks were sent to gate valves west of the station to make a test to determine the exact location of the break, and in the meanwhile a third party with radio-equipped car was dispatched to the opposite side of the river crossing. The third party located the break in the river and promptly notified all concerned by radio and shut off of the affected river line was promptly made.



General coverage of radio stations operated by Southern Natural Gas Company.

PROMOTIONAL NOTES and NOTIONS

By STANLEY JENKS

Utility-Manufacturer Logic

Colonel Hudson W. Reed, president, Philadelphia Gas Works, at the recent A.G.A. conference certainly pulled no punches in stating the case for (a) the creation of a more profitable market for gas appliance manufacturers so that they can better afford to improve what already is a high quality product, (b) the need for regional (at least) standardization of appliance specifications by utility utilitization men serving comparable gases, and (c) the need for maximum quality appliance sales through dealer channels to meet other fuel competition as intensively as possible.

It was all very timely and much to the point, and the sort of thing—top executive speaking—which cannot be said too emphatically or too often.

Lyle Harvey, president A.G.A.E.M., in his customary forceful way, earlier in the program had said that the only logical follow-through locally to the national advertising and promotional program costing the A.G.A. membership better than a million dollars a year is a cooperative dealer plan to provide dealers with a profitable gas appliance business.

I wish he had supplemented this by saying that the manufacturers are perfectly capable of doing this themselves if the utilities will cooperate by not competing with them or their dealers. Understand me correctly, I am not suggesting the utilities quit merchandising. That's foolish. I mean that you can't cooperate and compete at the same time, and there can be no real cooperation with a manufacturer of a high-quality product where and when the utility is paying its salesmen to take sales away from that manufacturer's dealers.

An Even Break

For example, there are 20 manufacturers of "CP" gas ranges in the United States. There should be twice as many, and there will be as soon as the utilities give the "CP" program the support it deserves. Their names are the honor roll of the range manufacturing industry. Every one of those manufacturers is mighty proud of his product. He spent considerable money developing it and tooling up to produce it. His only material reward lies in the profit he can make selling it. And believe me, he is out to sell all he possibly can. Ironically—for the gas utility makes more profit from the sale than he does—in many instances, he has to fight the gas utility for those sales, because the utility, by merchandising and wholesaling a selected few, sets up competitive conditions which are unfair to him. There is no gas company in the country big enough to stock, warehouse and wholesale 20 (next year 40?) lines of gas ranges.

The situation, therefore, howls to high heaven for a cooperative plan that calls for an equal opportunity for all. As a matter of fact, any range manufacturer worth his salt would not ask for more. And looking at it from the utility angle, I'll bet a sugar ration coupon the promotional effort stimulated by inter-manufacturer competition will in the end pay far bigger dividends than the restricted and non-profitable merchandising policies in vogue today.

New Freedom Gas Kitchen

Some remarks of mine recently on this page drew the fire of some of the New Freedom Gas Kitchen advocates. I was accused of having all the earmarks of being an old fogey on the subject. Either I couldn't or wouldn't understand the objective behind the program.

After hearing H. Vinton Potter at the A.G.A. conference tell his story—his enthusiasm is infectious—and after seeing his excellent sound-slide film, I must confess that a spot of recanting is in order.

The program is built around a simple promotional idea. Gas service must be togged up in modern dress, every vestige of the "Gay Nineties" must be wiped out, and our fuel must be glamorized to out-appeal its competitors. The judges are Mr. and Mrs. John Q. Public. Hence, with the gas range as core of the New Freedom Kitchen, a new conception of gas service value will be created. The plan is sound promotionally. Its practicability is simply a local matter of degree. We all can reach for a star. If the effort gets our heads out of the clouds, or even our carcasses off the ground, the effort is beneficial.

By all means, get a copy of the sound-slide film. It is in technicolor and excellently done. Some of the shots have a three-dimensional effect. The ladies will love the kitchens illustrated so tastefully and attractively. There isn't a sewing circle, Ladies' Aid, or Woman's Club that won't eat it up, and, whether they tear out their present kitchens or not, they'll certainly have a renewed respect for gas service and the cooking, water heating, refrigeration, space heating, and air conditioning it makes possible.

Welcome, Colonel!

D. A. Hulcy, president, Lone Star Gas Company, and chairman of the A.G.A. Promotional Committee, which in the current fiscal year plans to spend $440,240 backing up the national advertising program with organized action, pulled a "Churchill" by announcing the appointment to the A.G.A. staff of Colonel Hugh A. White, Jr., as promotional director. Very carefully culled and selected from 20 candidates for the post, Colonel White joins us at an opportune time. He has a man-sized job to fill. There's a whale of a lot of territory to be covered.

The cooperation he will get from all ranks in the industry will be forthcoming, for without it, the best sales executive this side of heaven could not possibly succeed.

KALAMAZOO STOVE

Production, Distribution, Sales and Dealer Cooperation Plans Outlined

A stove or furnace unit will come off the completely redesigned and streamlined Kalamazoo assembly line at the rate of one every 20 seconds, Arthur L. Blakeslee, president of Kalamazoo Stove & Furnace Co., announced in outlining the company's postwar production and distribution program.

Plans include revolutionized stove and furnace production, an enlarged distribution organization, and the addition of two lines not previously handled. The company is spending over $2,500,000 in re-tooling and re-designing the production line.

Products built will be gas and electric ranges, combination ranges, coal and wood ranges, heating stoves and a complete line of coal furnaces. Oil and gas warm air heating units will also be available. For the first time, refrigerator and washing machine models will be added to the Kalamazoo line. Models were styled by designers Walter Dorwin Teague and Jack Morgan.

For 45 years Kalamazoo has sold only by direct mail and through factory-owned stores. Now, the 285 pre-war retail stores will be supplemented by distribution through a proposed group of 500 franchise dealers and through department stores. Consumer marketing information compiled during the 45 years of direct mail selling will be placed at the disposal of dealers.

The Kalamazoo postwar program of dealer support is based on the company's own experience in selling direct to consumer by mail and through company-operated stores before the war.

1. *Sales training*: A two-week sales training clinic conducted at Kalamazoo will give dealers a refresher course in store organization, merchandising, advertising, accounting and sales method. Company engineers will interpret technical stove, furnace, heater, refrigerator and washing machine features. Home economists will demonstrate the models in use.

Retail salesmen will be trained right in the store by a special traveling sales training staff. A comparable engineering staff will help set up a pay-for-itself repair and service department in each store and will help train service employees.

2. *Business counsel*: Kalamazoo will set up, at the request of the dealer, an accounting method for checking profit and loss, developed in the company's own stores.

3. *Store layout and decorating advisory service*: A model store will serve as an experimental establishment where methods of display, merchandising systems and other phases of retail distribution will be tried out before being installed in other stores.

4. *Sales promotion*: This will feature cooking school demonstrations, circulating kitchen window displays, as well as national and local advertising and a complete line of sales promotion literature.

Taking part in one of the Regional Planning meetings of the A.G.A. Residential Section in Portland were, from left: Chairman R. G. Barnett, Portland Gas & Coke Co., vice president and general manager and A.G.A. director; H. Preston Morehouse, Public Service Electric & Gas Co., of Newark, N. J.; F. W. Williams, secretary of A.G.A.'s residential gas section; E. O. Olsen of Servel, Inc.; Elmer Cone of Ruud Manufacturing Co.; Arthur Staat of Natural Gas Equipment, Inc., San Francisco; O. A. Stevenson and C. W. Steele of Portland Gas & Coke. The model "home of the month" is a feature of Surface Combustion's all-gas home promotion. Meetings were held during September and October in principal cities throughout the West.

SALES POLICY

Wisconsin Utilities to Aid Dealers in Every Possible Way Short of Subsidy

WISCONSIN utilities have prepared plans to carry on aggressive merchandising postwar programs with complete tie-ins for dealers. That fact was made apparent when members of the Market Development Committee compared notes on outlines of plans of electric and gas companies at a recent Milwaukee conference.

Heads of sales departments were unanimous in their declarations they would aid dealers in every way possible short of providing subsidies. Some companies intend to intensify joint advertising messages with dealers. The committee expects to see many new dealers setting up business and among them they would not be surprised to find former utility salesmen who have returned from war service.

One company proposes to increase its former sales force by 50% and intends to augment its home service personnel considerably. Some companies will hold up building their sales organization to maximum strength until the expected flood of floor orders has receded.

The opinion prevailed that promotion should be the prime objective and that cooperating dealers should be provided with all the sales tools available to a utility. A motion was passed on request of J. H. Warden, chairman of the Residential Gas Section, A.G.A., approving the "Statement of Recommended Sales Policies Affecting Dealer Cooperation" as promulgated by the Executive Board of the A.G.A.

Various plans of banks to enter the installment financing field were welcomed and the hope was strongly expressed that bankers would be able to solve every problem connected with dealer financing. A committee consisting of F. A. Coffin, B. T. Franck and S. A. Bialecki was appointed to confer with Carl Flora, member of the Consumers Credit Committee of the American Bankers Association.

Philadelphia Co. To Spend $1,000,000 on Gas Plant

The Philadelphia Electric Co. is spending nearly a million dollars in new construction and improvements to its Chester gas production plants.

With more than $6,500,000 already invested in the two gas plants, the new improvements will give the Company the most modern production facilities in the gas industry, according to H. B. Bryans, executive vice president. The current improvements include:

1. An additional boiler and boiler building at the coke oven plant with a capacity one and one quarter times the capacity of the existing boilers.
2. A new gas generating unit, gas scrubber, and additional mains at the Tilghman Street plant which will increase the gas manufacturing capacity of the oil gas plant by about 12%.
3. New boiler feed-water system which will triple the capacity of the present system, and a new plant-water screening basin which will have an ultimate capacity double that of the present installation.

Ralph E. Jones is superintendent of the Chester gas plants. John W. Carroll is assistant superintendent, and Martin F. Gavetti, Jr., is engineer.

AGAEM Issues New "CP" Promotional Kit

The Association of Gas Appliance and Equipment Manufacturers on Oct. 10 issued a new "CP" promotional kit. Copies are going to all gas utility new business managers and chief executives. Copies are also going out in answer to the approximately 1500 dealer requests resulting from our trade paper advertising this year.

This kit is designed to—

1. Demonstrate to utilities and dealers the profit possibilities in promoting high grade gas ranges.
2. Merchandise the "CP" program.
3. Emphasize the importance of manufacturer's brand names on ranges built to "CP" requirements.
4. Merchandise the multi-million dollar A.G.A., A.G.A.E.M., and manufacturers' advertising and promotional programs.
5. Provide utilities with a "CP" promotional package they can use in building dealer cooperation.
6. Provide utilities and dealers with promotional material to use in selling "CP" to their customers.
7. Provide a guide for properly using the "CP" trademark.
8. Help offset the vast amount of material being sent out by competitors.

Made available at cost, the price of these kits is 50c each—a small price to pay to impress a dealer with the aggressiveness with which the gas industry is creating markets for profit-building gas range sales.

Owensboro and Western Kentucky Companies Merge

Sale of the Western Kentucky Gas Co. to W. T. Stevenson, of Owensboro, owner of the Owensboro Gas Co., was announced Oct. 25 by L. E. Ingham, vice president of the Kentucky Natural Gas Corp. The Western Kentucky Gas Co. was a wholly-owned subsidiary of the Kentucky Natural Gas Corp.

Simultaneously, Stevenson announced a merger of the Owensboro Gas Co. and the Western Kentucky Gas Co., effective Nov. 1st. The merged concerns will be operated as the Western Kentucky Gas Co.

Stevenson, who was president of both the Owensboro Gas Co. and the Western Kentucky Gas Co., will be president and treasurer of Western. Other officers are J. L. Bugg, vice president and general manager; J. W .Gilbert, vice president; Miss Priscilla Head, secretary; J. R. McCandless, assistant treasurer; and Carroll E. Byron, assistant secretary. Directors are Stevenson, Bugg, Gilbert, Miss Head and Byron.

Utility Floor Furnaces Now in Production

With completely new designs prepared in advance utility floor furnaces were placed in mass production within six weeks after V-J Day by Utility Appliance Corp., according to a company announcement. Deliveries of floor samples have been made to dealers and distributors, and shipments against orders on hand are now following on a pro rata basis. All Utility Floor Furnaces meet the A.G.A. requirements for maximum temperature in the heat exchanger unit.

Forward Receives "Oscar" At Gild Dinner

Presentation of an "Oscar" to Major Alexander Forward, retired managing director of the American Gas Association, highlighted a dinner given in his honor by the Gild of Ancient Supplers, at the Engineers Club, New York, Oct. 10. This was the third such award in the Gild's eight years of existence.

An honorary member of the Gild, Major Forward was greeted by 35 Supplers and specially invited Burghers.

Mayor C. E. Bartlett, of Bartlett & Co., Philadelphia, Pa., presided and presented the "Oscar." J. French Robinson, president of A.G.A. and president of the East Ohio Gas Co., Cleveland, Ohio, paid tribute to Major Forward's part in building the association "from grass roots to a position second to none in American industry."

Mayor C. E. Bartlett of the Gild of Ancient Supplers presents "Oscar" to Major Alexander Forward, Retiring managing director of the American Gas Association.

Payne Furnace To Double Production Capacity

Payne Furnace Co., Beverly Hills, has launched a $250,000 building and expansion program designed to double production, it was announced Nov. 2 by E. L. Payne, president.

Even the major expansion undertaken during the war, when, for three years, "Payneheat" concentrated on essential production for the armed forces, is totally inadequate for the peacetime job ahead, company officials assert. The present backlog of furnace orders, they say, is equivalent to a full pre-war year's production, not to mention new orders being received daily.

The project contemplates immediate construction of two major additions to the plant totaling 64,000 sq. ft. Modern new machinery and equipment, reflecting wartime technological advancements, will be installed, including a battery of advanced-type paint-drying ovens and conveyor systems for line-production and loading, to speed output and delivery of finished products, the announcement said.

"Upon completion of this expansion program, we hope to be able to fill all orders as they are received, contingent upon availability of materials," Payne added.

Maytag To Manufacture Gas Appliance Line

Addition of an automatic type washer, and automatic clothes drier, both gas and electric, a gas range and an electric frozen food locker to the Maytag Co.'s (Newton, Ia.) line of household appliances was revealed this week by president Fred Maytag II.

The announcement followed a series of conferences of Maytag branch managers and distributors held at the home office at which the new products were previewed. They will be added to the line of conventional type washers and ironers produced by the 50-year-old company, which manufactured and sold more than 4,000,000 washers before converting to war production in 1942.

Maytag recently purchased a minority interest in the Globe-American Corp. of Kokomo, Ind., which will produce Dutch Oven gas ranges exclusively for Maytag. Fred Maytag II, and Maytag vice presidents George Umbreit and Roy A. Bradt have been elected to the Globe-American board of directors.

Rheem Building Plant At Rio de Janeiro

R. S. Rheem, president of Rheem Manufacturing Co., announced recently that construction has begun on a new plant in the Cordovil section of Rio de Janeiro for the manufacture of steel shipping containers for the petroleum, alcohol, paint and vegetable oil industries in Brazil. The equipment is crated and ready for shipment from the United States, and it is expected that the plant will be in full operation by March 1, 1946. While the initial operations will be confined to steel shipping containers, it is expected that other Rheem products will be added.

Canadian Group Seeks Public Ownership of Gas

THE Ontario Municipal Association, holding its 47th annual convention in Toronto, adopted a resolution that called upon the provincial government to consider the possibility of having the gas industry brought under public ownership.

The resolution, sponsored by the city of Brantford and endorsed by the cities of Sarnia and Belleville and the town of Preston, urged the government to conduct a survey of the fuel gas situation in Ontario. In addition to recommending that a Royal Commission or parliamentary committee conduct such a survey, the resolution urged that economical methods be undertaken to provide adequate gas supplies and then added—"unless it should be found that gas has outlived its usefulness and should be replaced by electrical power or by some other fuel."

Supreme Court Writes Finis To Memphis Case

The Supreme Court of the United States on October 8 denied the writ of certiorari sought by the State of Louisiana in the Memphis Natural Gas Co. case. Thus, the Memphis utility, supported by the Independent Natural Gas Association of America, has defeated the efforts of the State of Louisiana in its attempt to have the Supreme Court put its stamp of approval on the State's contention that the Federal Government should restrict end use of natural gas.

By denying this petition, the Supreme Court refuses to hear the case and thus makes effective the FPC final decision granting the Memphis application.

Secrets of German Oil Industry to Be Available

Secrets of the German oil industry, some of them gathered from the ruins of wrecked plants before the Nazi surrender, are now available to the public, Deputy Petroleum Administrator Ralph K. Davies announced Oct. 23.

The Library of Congress has agreed to make the records, collected by a mission of petroleum technologists organized under the supervision of the Petroleum Administration of War, a part of its permanent archives since the PAW is a war agency now in process of liquidation, Davies explained.

The information to be made available may be divided into four categories:

1. About 150 microfilm reels of approximately 1000 frames each. Each frame contains a page of a captured document. The films may be ordered from the Library of Congress Photoduplication Service at the usual nominal reproduction cost.

2. Indices of the microfilm reels, describing briefly what information the reports included in each reel contain. A copy of this index is available at the Library of Congress and will also be distributed to libraries in 35 key cities throughout the country for inspection by interested companies or individuals.

3. Reports by individual members of the mission on areas visited. These areas usually include one but sometimes more than one plant. The reports are based on records found, personal observations, and interrogation of plant personnel near the plant concerned.

4. Summaries of the information contained on the microfilms prepared by subjects or processes. About 25 of these microfilms have been translated through cooperation of technologists.

Free X-Ray Examination Offered Utility Personnel

Free X-ray examination offered by the Los Angeles County Tuberculosis and Health Association will again be available to personnel of Southern California Gas Co. The company's Labor-Management Committee is arranging for the return of the mobile unit by the first of the year.

Some 400 men and women in the company were examined on October 2 and 3. Transportation to and from the unit was furnished by the Company for all examinees in the Central Division.

Bryant Heater Building Plant at Tyler, Texas

Bryant Heater Co., Cleveland, O., on Oct. 22 began construction on a new $400,000 plant and headquarters at Tyler, Texas. Completion of the structure will take about six months.

The building, of concrete, masonry and structural steel, will be 500 x 210 ft. and one story except for a two-story 20 x 210 office. When equipment is installed the investment will run more than $500,000. The firm will employ from 150 to 200 persons in the manufacture of unit heaters, water heaters, floor furnaces and panel ray heaters.

This and other "CP" advertisements are appearing in a total of 18 publications. Above is one of a series appearing in "Architectural Forum," "Architectural Record," "American Builder," and "Practical Builder."

Northern Natural Petition Dismissed by FPC

The Federal Power Commission has dismissed an application of the Northern Natural Gas Co. to sell natural gas to the Northern States Power Co. for resale as straight natural gas or as an enriching agent for manufactured gas for public consumption in the St. Paul area.

Based upon the evidence presented, which failed to show sufficiently that the sale of natural gas in the St. Paul area is required by the present or future public convenience and necessity, the Commission granted the motion of Koppers' Co., one of the interveners in the case, to dismiss the application for authority to sell natural gas. The dismissal of this application, however, has no effect upon the Northern Natural's existing temporary certificate to sell natural gas to replace that not provided by Koppers to the Northern States Power. Neither does it affect Northern Natural's present authority under another certificate to sell natural gas to Peoples Natural Gas Co. for resale in St. Paul to the Ford Motor Co. and to the Waldorf Paper Products Co. for industrial use.

In its application, Northern Natural sought authority to sell natural gas to Northern States for resale as 800 Btu gas or straight natural gas in St. Paul, South St. Paul, West St. Paul and Rosetown, Minnesota.

Honeywell Opens New Branch

Formation of a new branch office, to be known as the Peoria-Davenport office, has been announced by Fred Kaiser, Chicago regional manager, Minneapolis-Honeywell Regulator Co.

The move was taken to help meet expanding sales activities in the area. The Peoria-Davenport office will be under the management of Edward Thompson, formerly of the company's Kansas City branch. James F. Wyllie of the Chicago headquarters industrial division has been transferred to Peoria to supervise industrial activities and will assist Thompson.

William Beale, also of the Chicago office, will be assigned to assist Thompson and will be located in Davenport, Kaiser said. With Beale will be Leland Kuntz, who has been on the Davenport staff, but who has now been made industrial representative.

All moves were effective Oct. 1, Kaiser stated.

Red Deer Alberta, Seeks Natural Gas Service

Residents in Red Deer, Alberta, have approved a plebiscite authorizing the city to enter a contract with Northwestern Utilities for the installation of natural gas. As a result of the plebiscite, the gas franchise by-law is being prepared for final reading.

Northwestern Utilities already has completed survey work for the laying of a $1,600,000 pipeline to serve Red Deer and possibly Camrose, Wetaskiwin, Ponoka and Lacombe.

The Nation's Choice IN RADIANT HEATERS

Smart styling, rugged construction and unsurpassed heating efficiency make Humphrey Radiantfires the Nation's Choice in radiant heaters. In their field, they are the standard of comparison.

HUMPHREY RADIANTFIRES

GENERAL GAS LIGHT COMPANY KALAMAZOO, MICHIGAN

23 Warren St., New York City · 2nd Unit Santa Fe Bldg., Dallas · 225 Eleventh St., San Francisco

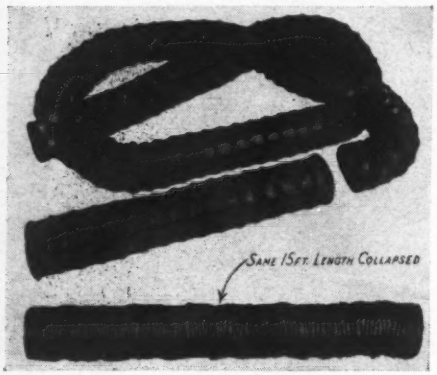
NEW PRODUCTS

Ventilating Hose

American Ventilating Hose Co., 15 Park Row, New York.

Model: "Portovent".

Application: Meets needs for metal reinforced light weight large diameter ducts which can be compressed into



small space for transportation, and yet stay open around sharp bends. It is well suited for use with portable manhole and tank ventilators, portable air conditioning, heating and cooling units.

Description: A special feature is its sectional construction allowing the assembly of any desired length from 2½-ft. length sections which are readily coupled and uncoupled with only the hands; and yet form a tight joint which will not be broken by jerks or pulls encountered in service. Special attachments for coupling to blowers or other air handling apparatus are provided, and these fittings couple inter-changeably with either end of any section. The reinforcement consisting of rings spaced from 2 to 5 in. apart varying according to the diameter of the hose are held firmly in place around their entire circumference by the Neoprone base compound which also covers the entire inside and outside of surface of hose.

"Portevent" is offered in sizes from 5 to 24 in. diameter. Compression for packing is 6 to 1 overall, and can be still greater if used for light service.

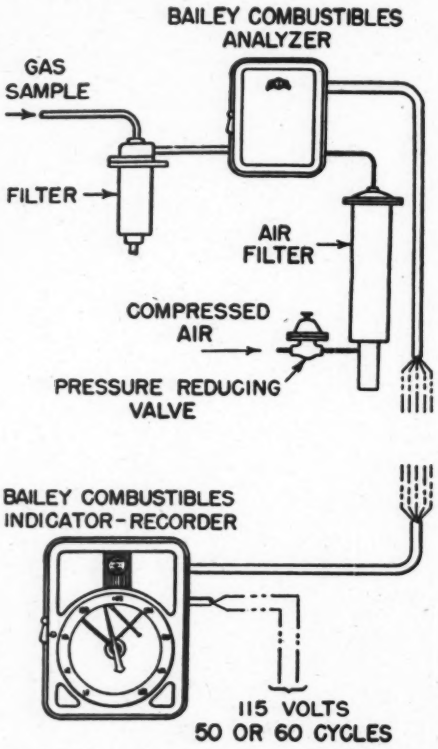
Combustibles Recorder-Controller

Bailey Meter Co., 1050 Ivanhoe Road, Cleveland, Ohio.

Application: An automatic analyzer and recorder for indicating, recording and controlling the combustibles content of a gaseous mixture. Combustibles Recorder-Controllers applied to process furnaces operating with reducing atmospheres are said to permit finer measurement and control than has heretofore been considered possible. This results in greater uniformity and higher quality of product, as well as greatly increased furnace economy. Variable fuel quality does not affect the accuracy of control on installations of this type.

Description: The analyzer and recorder provide a continuous garphic analysis, and are said to be responsive to changes of .05% combustibles. Sustained accuracy is within .25%.

Operation: A continuous gas sample is mixed with compressed air and burned on a catalyst-filament which reaches a temperature proportional to the combustibles content. Since the filament resistance is a function of temperature, a simple resistance bridge connected to a null-balance electronic recorder completes the installation. It may be



calibrated in per cent combustibles, mixture ratio, or other desired terms.

Pneumatic control or electric alarm contacts may be provided on both one and two-pen recorders. A two-pen recorder utilizes separate analyzers so that the speed is not impaired by switching, and the two records are independent of each other.

Air and Gas Cleaner

Aerotec Co., 61 West Chester Ave., White Plains, N. Y.

Model: Aerotec.

Description: New type air cleaning tube used in multiples up to any desired capacity, has high precipitating efficiency and develops no pressure build-up. Clean air is exhausted from central tube while the dust is precepitated from the bottom. Single tube has a capacity of 30 cfm at 4 in. w.g. resistance.

Application: For reclaiming valuable powders; intakes on diesel and gas engines; cleaning dangerous dust laden air in industrial and chemical plants; and any other application requiring higher collection efficiency than obtainable in standard dust collectors.

New Surface Combustion Dew-Point Recorder

Surface Combustion, Toledo 1, Ohio.

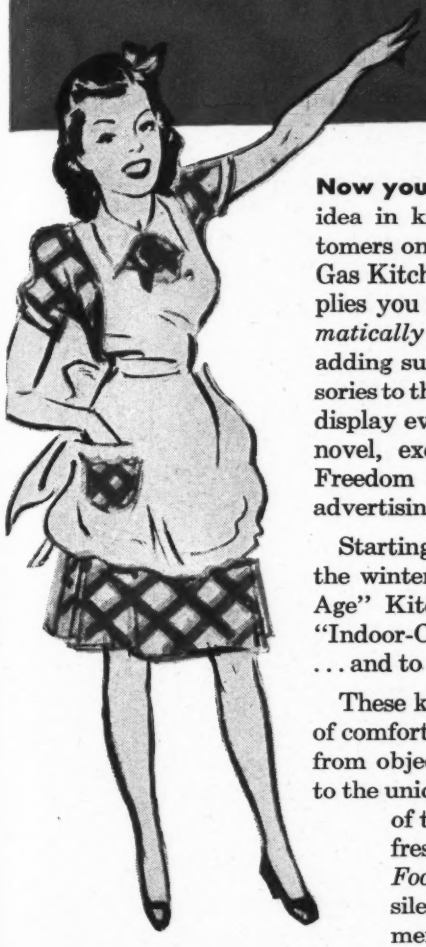
Application: Closer control of the effects of water vapor in air or other gaseous mixtures. The new recorder is especially applicable for furnaces utilizing prepared gas atmospheres, or wherever dehydrated air or a gas mixture of controlled moisture content is desirable, as in the chemical and food processing industries, drug preparation, etc.

Description: The new recorder can provide a virtually continuous record of humidity within a temperature range of from minus 70° to plus 60° F. More precise and more frequent adjustments of the various constitutent gases in the atmosphere can thus be made to compensate for differences in humidity. Or if humidity control of the air or gaseous atmosphere is used, permanent information concerning its dew-point is provided.

Operation: The recorder applies the principle of the dew-point cup, which has long been used in its original form for determining the humidity of air and other gaseous mixtures. Its operation is therefore independent of the nature or composition of the gases making up the atmosphere. The presence of "impurities" in the furnace gases, such as hydrogen sulphide and

sulphur dioxide have no effect upon its accuracy. Hence an analysis of the furnace gas, previously the customary method of checking for the desired humidity and often the only method used, is unnecessary.

A NEW KITCHEN DISPLAY SERVICE



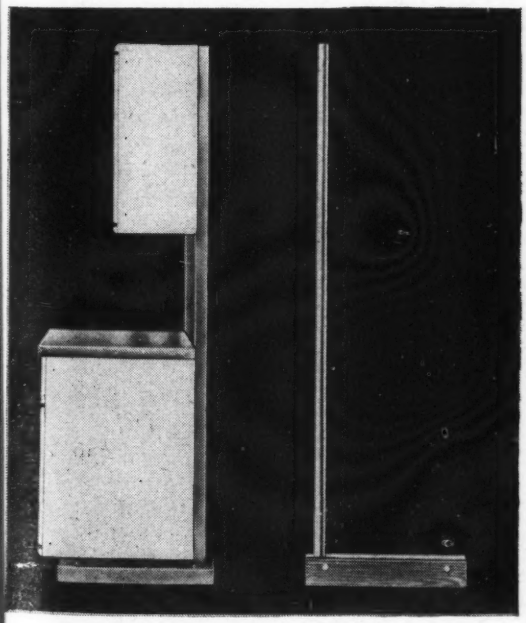
Now you can take advantage of a new idea in kitchen display to sell your customers on the modernity of New Freedom Gas Kitchens. In one package, Servel supplies you with basic equipment for a *dramatically different display kitchen.* By adding supplementary cabinets and accessories to this Servel set, you can change your display every season. Each kitchen will be novel, exciting—modeled after the New Freedom Gas Kitchens shown in Servel advertising and promotional material.

Starting with the "Toddler's" Kitchen in the winter . . . you can change to the "Teen-Age" Kitchen in the spring . . . to the "Indoor-Outdoor" Kitchen in the summer . . . and to the "Hobby" Kitchen in the fall!

These kitchens feature new, undreamed-of comforts. They stay clean, cool, and free from objectionable cooking odors—thanks to the unique air control cabinet that's part of the *Cooking Unit.* They keep food fresher and more palatable in the *Food Conditioning Unit*—where the silent Gas Refrigerator is supplemented by a dry storage cabinet in which cereals and crackers stay appetizingly crisp. And these Unified Kitchens make dishwashing easier because the *Cleaning Unit* includes . . . in addition to an efficient sink . . . convenient areas for soaps, brushes, steel wool and other cleaning materials.

Your basic set of display materials will include all you need to set up your first kitchen. You will receive base cabinets, wall cabinets, air control cabinet, food conditioning cabinet—and complete blueprints for setting them up. (You supply range and refrigerator from stock and purchase simple decorative accents.) At the end of the season, you can easily dismantle the first kitchen . . . thanks to the "Standfree" display fixtures that simplify removal of cabinets. By adding a few parts and substituting other decorative accents, you can rearrange the same basic equipment to create an entirely different-looking kitchen with new inspiration.

Servel Unified Gas Kitchen displays are being prepared. Order yours now. And be first with a dramatically exciting display of the Servel-designed New Freedom Gas Kitchen.



The secret of easy set-up and removal of Servel Display units is these "Standfree"-type display fixtures that hold unit securely, yet make dismantling easy.

Servel Inc. EVANSVILLE 20 INDIANA

COPR., 1945, SERVEL, INC.

A.G.A. Meeting Features Problems of Peace

ANNOUNCEMENT by the time and place committee of the American Gas Association that the next annual convention of that organization will be held in October, 1946, at Atlantic City, and will be complete with exhibits, was the most popular note sounded during the last of the association's streamlined war style annual meetings held in New York October 24th and 25th.

J. French Robinson, of the East Ohio Gas Co., retiring president, keynoted the discussions when he warned his audience that as far as the gas industry is concerned the critical days lie ahead and not behind it. After paying tribute to his committee members, fellow officers and to the headquarters staff employees who have worked with and under him for the past year, president Robinson introduced the scheduled speakers who discussed in more detail what gas is doing to meet the challenge of the impending future.

Ralph W. Gallagher, board chairman of the Standard Oil of New Jersey, talked about new responsibilities for industry. Those responsibilities add up to an obligation to keep our economy functioning under private enterprise or see it taken over lock stock and barrel by the planners.

Ernest R. Acker, Central Hudson Gas and Electric Corp., who as chairman of the Special Committee on Gas Industry Research and Promotion, has been most influential in getting an expanded promotion program under way, led a symposium on the subject of going forward with research and promotion. P. T. Dashiell, Philadelphia Gas Works Company, who has been heading up gas production research, reported progress in that endeavor and counselled patience and continued confidence in the effort. The industry either goes ahead and supports the activity, or it loses what it has already invested, in the speaker's opinion.

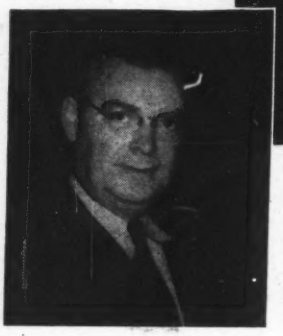
E. P. Noppel, of Ebasco Services, Inc., Chairman of the coordinating committee on research, outlined in brief the various gas utilization problems that are under academic and laboratory consideration at the present time. There are in all about 25 projects that have had the go-ahead signal, and as new laboratory facilities are released through war's end many and varied subjects from kitchen ventilation to the characteristics of radiant heat for industrial uses will be studied. Twenty-one projects have been assigned to the A. G. A. Testing Laboratories; others have been farmed out to the Institute of Gas Technology, the Bureau of Mines, the Case School of Applied Science and to Purdue University. A fertile field for widespread industry cooperation, research can be most effective if the gas industry will (1) carefully study and follow reports on all work (2) advise the research committees promptly of any pertinent ideas or suggestions that might be of value, and (3) take steps to encourage manufacturers to incorporate new discoveries into their own appliances and equipment on a commercial scale, Noppel said.

D. A. Hulcy, of Lone Star Gas Co., as chairman of the association's promotional committee, spoke mainly on the difficulty that had been experienced in obtaining the services of a promotional director for the job. He announced for the first time the name of the candidate who has been selected for the spot—Col. John H. White, Jr. White will work closely under the new Managing Director H. Carl Wolf, who is nationally recognized as an expert on gas industry promotion activities.

J. J. Quinn, of Boston Consolidated Gas Co., and also on the national advertising committee, gave an optimistic preview of the campaigns that have been set up for the association fiscal year, which started October 1. The new freedom gas kitchen is to be featured in the slick magazines. "This Week" and "American Weekly" have been added in the Sunday supplement field with a slightly different copy slant but carrying mention of the new freedom kitchen. Messages thus presented add up to approximately double the consumer circulation over that of last year with 90% of the insertions in four colors. Commercial and industrial space has also been stepped up and 16 gas-using fields will be covered in this campaign, largely through their trade publications.

The Association of Gas Appliance and Equipment Manufacturers who

At left — Ernest R. Acker, president of the Central Hudson Gas & Electric Corp., Poughkeepsie, and chairman of AGA Special Committee for the Research and Promotion. Plan talks over the industry's future with D. A. Hulcy, president of Lone Star Gas Co., who is serving as chairman of AGA's promotional committee.

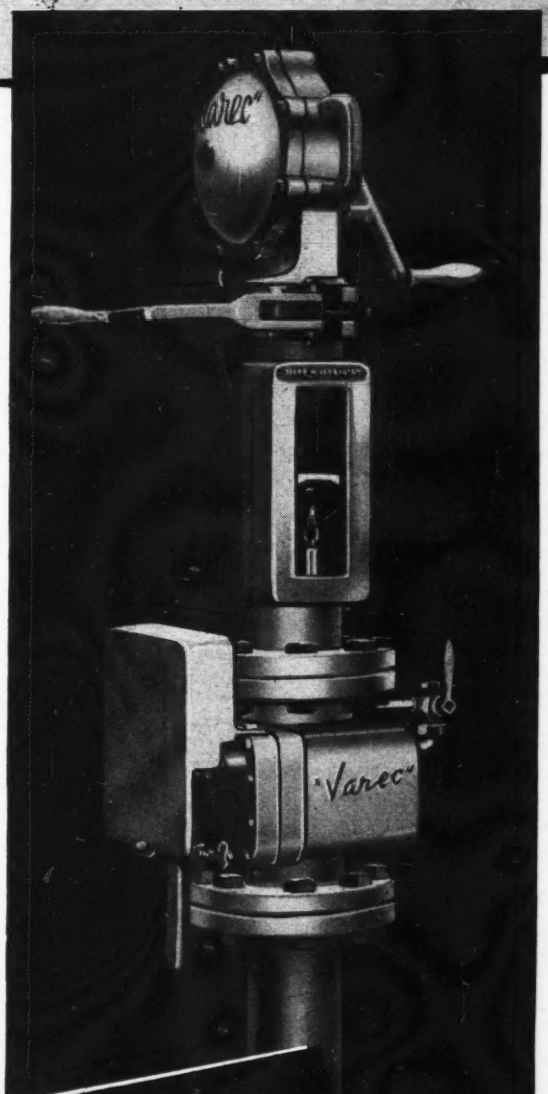


Above—Two Southern Californians, executive vice president H. L. Masser of Southern California Gas Co. and vice president and general manager A. F. Bridge of Southern Counties Gas Co.

At Left—E. Holley Poe, natural gas consultant of New York City, whose firm has been representing the gas industry in FPC's natural gas investigation.

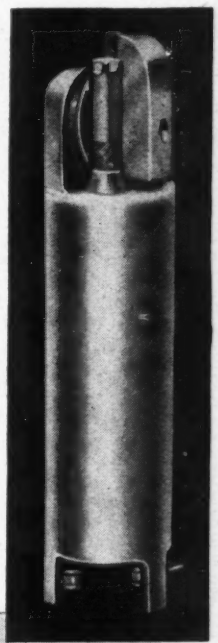
ACCURATE-GASTIGHT

"VAREC" approved HAND GAUGING and SAMPLING UNIT FOR PRESSURE STORAGE



"VAREC" approved Gastight Hand Gauging and Sampling Unit is used on all types of tanks for taking accurate gauges, temperatures, and spot or running samples without loss of tank pressure. Made of cast aluminum, semisteel or cast steel with bronze and Stainless Steel trim and tape, it is noncorrosive throughout. An adjustable quick release arm releases the neoprene-sealed coupling between the head and body. The sheave handle is equipped with a ratchet-stop held in place by a spring-loaded plunger. Thus, an automatic stop is provided at any desired level. In serving a group of tanks, blind heads with one or more portable heads, assure maximum performance with economy. The Sampling or Temperature Bomb is cadmium plated bronze and Stainless Steel trim. When sampling, a slight jerk on the tape opens or closes the valve. Thermometer is installed in mercury well.

Wherever there are volatile or combustible products, in storage tanks, in refineries, or in pipe-lines, THERE is THE DEFINITE need for "VAREC" approved Tank Equipment, Gas Control and Safety Devices. "VAREC" Conservation Vent Valves with Flame Arresters are protecting volatiles from evaporation, product deterioration, and fire hazards, thus attaining maximum production. "VAREC" Gastight Automatic Tank Gauges with Built-in Gravity Compensator measure the tank contents to the highest degree of accuracy attainable. Many engineers specify "VAREC" Swing Line Equipment and Safety Devices as "STANDARD" where 100% efficiency and service are demanded.



IF IT'S "VAREC," IT'S PRE-FIELD TESTED.

The Pace-Setter Since 1928

THE VAPOR RECOVERY SYSTEMS CO.

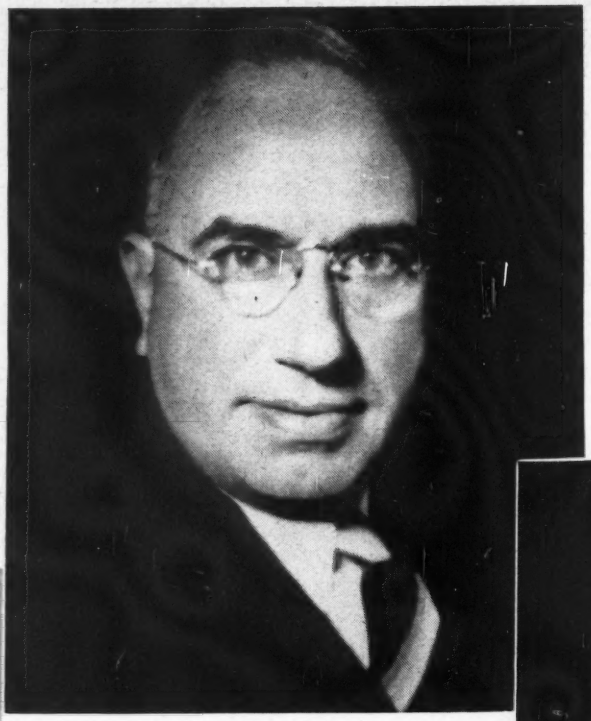
Consultants, Designers, and Manufacturers of Gas Control and Tank Equipment

COMPTON, CALIFORNIA

NEW YORK CITY • NEW ORLEANS, LA. • HOUSTON, TEXAS
TULSA, OKLA. • AGENCIES EVERYWHERE

A.G.A. LEADERS

1945-1946



RETIRING PRESIDENT

Left — J. French Robinson, retiring president of AGA, receiving the Charles A. Munroe Award, highest honor bestowed by the American Gas Association; for story turn to page 62.

Below—R. T. Hargroce was elected vice president, replacing E. J. Boothby, the new AGA president. Hargrove is also chairman of the Natural Gas Department of the AGA.

VICE PRESIDENT

PRESIDENT

Right—E. J. Boothby, who had served as first vice president under J. French Robinson, was elevated to president of the AGA at the annual meeting in New York.

OFFICERS AND DIRECTORS, A.G.A., (1945-1946)

(Elected at Annual Meeting, October 24 and 25, in New York City)

OFFICERS

President: Everett J. Boothby, vice president and general manager, Washington Gas Light Co., Washington, D. C.

First Vice President: R. H. Hargrove, vice president, United Gas Pipe Line Co., Shreveport, La.

Second Vice President: Hudson W. Reed, president, The Philadelphia Gas Works Co., Philadelphia, Pa.

Treasurer: Edward F. Barrett, president, Long Island Lighting Co., Mineola, N. Y.

DIRECTORS—TWO YEAR TERM

J. French Robinson, president, The East Ohio Gas Co., Cleveland, O.; R. E. Fisher, vice president, Pacific Gas & Electric Co., San Francisco; Walter C. Beckjord, president, Cincinnati Gas & Electric Co., Cincinnati; Charles M. Cohn, president and chairman of the board, Consolidated Gas, Electric Light & Power Co. of Baltimore; E. H. Eacker, vice president, Boston Consolidated Gas Co.; J. N. Greene, president, Alabama Gas Co., Birmingham.

H. E. Handley, president and general manager, Handley-Brown Heater Co., Jackson, Mich.; D. A. Hulcy, president, Lone Star Gas Co., Dallas; Henry H. Morse, vice president, Florence Stove Co., Gardner, Mass.; E. P. Noppel, general consultant, Ebasco Services, Inc., New York; Clifford E. Paige, Chairman of the board and president, The Brooklyn Union Gas Co.; E. J. Tucker, director and general manager, Consumers Gas Co. of Toronto, Ontario, Canada.

SECTION OFFICERS

Accounting Section: Chairman—E. F. Embree, general auditor, New Haven Gas Light Co., New Haven, Conn.; Vice chairman—Leith V. Watkins, secretary-controller, Panhandle Eastern Pipe Line Co., Chicago.

Residential Gas Section: Chairman—J. J. Quinn, sales manager, Boston Consolidated Gas Co.; Vice chairman—Wallace M. Chamberlain, sales manager, Michigan Consolidated Gas Co., Grand Rapids, Mich.

Industrial and Commercial Gas Section: Chairman—Harry A. Sutton, Asst. general industrial fuel representative, Public Service Electric & Gas Co., Newark, N. J.; Vice chairman—Karl Emmerling, asst. general superintendent, The East Ohio Gas Co., Cleveland.

Manufacturers' Section: Chairman—Frank H. Adams, general manager, Surface Combustion, Inc., Toledo.

Publicity and Advertising Committee: Chairman—Charles A. Tattersall, vice president, Niagara Hudson Power Co., Syracuse.

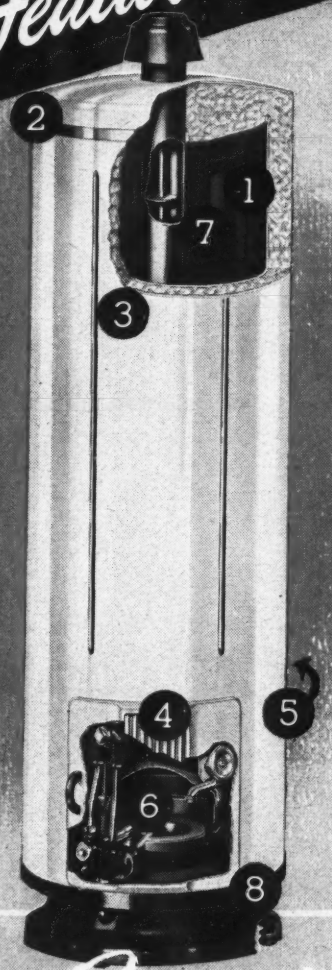
Technical Section: Chairman—Lester J. Eck, vice president, Minneapolis Gas Light Co., Minneapolis; Vice chairman—C. S. Goldsmith, engineer of distribution, The Brooklyn Union Gas Co.

threw in their contribution to group advertising with A. G. A. last year are now pulling out and embarking on a separate campaign of their own, according to Lyle H. Harvey, of the Bryant Heater Co., who is president of the A. G. A. E. M. Appliance and equipment manufacturers believe that the gas industry and its equipment, appliances and services must be strongly merchandised at the dealer level, and they propose to tackle this assignment. A study of methods is at present going ahead under the association's sponsorship and as soon as those entrusted with the responsibility come up with the answers a program will be drawn up and announced.

In a pep talk on the New Freedom gas kitchen program, H. Vinton Potter, its director, opined that gas "needs a halo," which the New Freedom program is in a position to affix.

Hudson W. Reed, of the Philadelphia Gas Works Co., was the last speaker to take up a phase of the subject of industry promotion, when he discussed meeting electrical competition. Recognizing the need for new and modern developments in the appliance field, he nevertheless

Features that challenge comparison in the Permaglas water heater



There's Only One *Permaglas*

GLASS-FUSED-TO-STEEL

A GREAT AID TO SALES

With SMITHway *Permaglas* Water Heaters you have the most dramatic *new* sales story in the home-appliance business! • Single-piece, *glass-lined* tank • Sanitary as a clean drinking glass • Freedom from all tank rust and corrosion • No "corrosion-dirt" in the bath . . . no "tank spots" on clean clothes • Sparkling clean hot water as pure as the source itself.

1 **Permaglas** . . . the glass-fused-to-steel lining . . . sparkling blue, mirror-smooth, sanitary as a clean drinking glass. There is only *one Permaglas!*

2 **Beauty of Design** . . . gleaming white with all decorative trim of polished stainless steel.

3 **Neotone White Enamel** finish . . . inside and outside of exterior shell protected by enamel-baked-on-steel. Easy to keep glistening *clean!*

4 **Hidaway Controls** . . . all controls concealed behind a convenient door, yet readily accessible. The *Swing-Drain Faucet,* too, is located here, ready for use when needed.

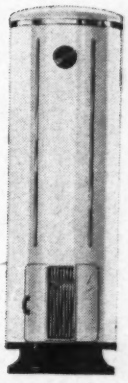
5 **Rear-Vu Connections** . . . no unsightly piping on top of heater . . . eliminates condensation drip on heater . . . a truly modern gas installation.

6 **Uniflow Gas Burner** . . . the most efficient automatic type yet developed. Clean, sharp, even combustion over entire burner ring.

7 **Monoquad Construction** with Tru Center Flue . . . assures greater strength and longer life.

8 **Pyramid Base** . . . sturdy and practical, provided with adjustable jacks to level heater on uneven floors and take weight off pipe connections.

SMITHway Water Heaters, lined with *Permaglas,* deliver hot water as sparkling clean as the water source itself! There's no tank rust or corrosion because *Permaglas can't* rust or corrode.



Get the PERMAGLAS Story Now!

Send today for the complete details . . . get the booklet, "The Inside Story of Permaglas"—the *new* story that's packed with sales appeal.

Heated with Gas . . . Stored in Glass

SMITHway *Permaglas* WATER HEATERS

A. O. SMITH Corporation

J. FRENCH ROBINSON RECEIVES CHARLES A. MONROE AWARD

J. French Robinson, president, The East Ohio Gas Co., Cleveland, and retiring president of the A.G.A. at the association's annual meeting Oct. 25, received the Charles A. Munroe Award, highest honor bestowed by the American Gas Association, for having made the most outstanding recent contribution toward the advancement of the gas industry.

The award was made to Robinson in recognition of his wartime leadership of the gas industry, his personal contributions to its effectiveness in meeting the demands of wartime production, and his work of coordinating the gas industry with wartime fuel activities of the government.

Robinson has taken a significant part in representing the gas industry before governmental agencies; has served ably on various war industry committees. He was coordinator for Natural Gas on the Petroleum Industry War Council and is a member of the industry Steering Committee preparing representations for the Natural Gas Industry before current Federal Power Commission hearings. In these successful accomplishments, his efforts have exceeded greatly those that might have been expected of him in any official capacity.

The committee selecting Mr. Robinson for the award which consists of a certificate and monetary award, gave honorable mention to Ernest R. Acker, president, Central Hudson Gas & Electric Corp., who received the 1943 award, for his continued contributions to the advancement of the gas industry in the instigation and administration of the A.G.A. Promotion and Research Program. Honorable mention also is given to Alexander M. Beebee, vice president, Rochester Gas & Electric Corp., for his splendid achievement as chairman of the A.G.A. Postwar Planning Committee in pioneering this project and assembling an efficient organization to complete the reports which received such deservedly wide attention.

The Charles A. Munroe Award Committee consisted of L. E. Knowlton, Providence Gas Co., chairman; C. E. Packman, Middle West Service Co.; C. A. Tattersall, Niagara Hudson Power Corp.; J. H. Warden, Oklahoma Natural Gas Co.; and H. K. Wrench, Minneapolis Gas Light Co.

warned utilities to be careful lest their capricious requests for unnecessary variations in design place manufacturers under a competitive handicap in complying.

There was some indication that the American Gas Association is cognizant of the fact that in the Federal Power Commission's G-580 investigation of the natural gas industry currently under way, the whole future of gas utilization may be at stake. Walter C. Beckjord, of Cincinnati Gas and Electric Co., stated that the organization is not so constituted that it may participate in the hearings, although it is prepared to render services that might assist the participation of member companies.

E. Holley Poe, of E. Holley Poe and Associates, who is experting and coordinating the whole natural gas industry's case in the G-580 investigation, brought the assemblage up to date on the maneuvers of the F.P.C. in its field investigations, and made a strong bid for industry solidarity and cooperation in resisting any further encroachment of Federal bureaucracy into industry affairs.

E. J. Boothby, Washington Gas Light Co., who had served as first vice president under J. French Robinson, was elevated to the top position. upon recommendation of the nominating committee; R. H. Hargrove moved into first vice president, and Hudson W. Reed was elected second vice president. Edward F. Barrett stays on as treasurer. The Monroe Award for outstanding achievement in behalf of the gas industry was presented to retiring president Robinson by his successor, E. J. Boothby, and five employees of the Washington Gas Light Co. were presented with McCarter medals for life saving accomplishments.

Winding up the formal meetings was a sound film in technicolor recording the steps in the construction of the 1200-mile line of the Tennessee Gas and Transmission Co. which has now completed its first year of successful operation. The film was regarded by many as the best industrial motion picture that has ever been shown on a gas subject.

Regional Meetings Set For Home Planning Bureaus

A program for guidance of the millions of American families planning to build or remodel homes is being offered to gas utility company executives attending a series of regional meetings of the American Gas Association being held throughout the country.

Members of the gas industry's national association are being urged by W. J. Grover, marketing director of Surface Combustion Corp., Toledo, O., manufacturer of Janitrol gas-fired heating equipment, to organize home planning bureaus in their communities where a family could go for sound advice on every step in building or buying a home.

The utilities represented at the A.G.A. regional meetings, which started in September and will continue until the end of the year, will be offered material giving them complete information on organizing and operating a home planning bureau, covering subjects such as selection of bureau personnel, displays and sample advertising. Suggestions are included for enlisting the cooperation of the community's home building industry in supplying the public with reliable answers to their questions on home building at one central location.

Lyle C. Harvey Elected President of A.G.A.E.M.

At the annual meeting of the Association of Gas Appliance and Equipment Manufacturers Lyle C. Harvey was re-elected president for the association year, which began Oct. 1, 1945 and ends Sept. 30, 1946. Harvey is president of the Bryant Heater Co., Cleveland, O., and vice-president and director of Dresser Industries, Inc.

The following officers were re-elected for a term of one year: vice president, D. P. O'Keefe, president, O'Keefe and Merritt Co., Los Angeles, range manufacturers; vice president, John A. Robertshaw, president, Robertshaw Thermostat Co., Youngwood, Pa., manufacturers of control equipment; treasurer, John Van Norden, secretary, American Meter Co., New York, N. Y., manufacturers of meters.

The membership of the Association has increased 35% during the war years and today it represents 90% of the production in all gas appliance and equipment fields.

Independent Gasoline Ass'n Organized in California

The organization of an Independent Natural Gasoline Association in California to "spearhead the efforts of California producers in bettering the affairs of the industry" has been announced in Los Angeles. The executive committee is headed by Davis Staples of Pacific Western.

CALENDAR

November

American Petroleum Institute, Silver Jubilee Meeting—Stevens Hotel, Chicago, Nov. 12-15.

Mid-Southeastern Gas Association Convention—Sir Walter Hotel, Raleigh, N. C., Nov. 23.

Federal Power Commission's Natural Gas Investigation Hearing—New Orleans, Nov. 12. (Postponed from Oct. 30.)

December

Interstate Oil Compact Commission Meeting—Allis Hotel, Wichita, Kansas, Dec. 13-15.

January, 1946

Federal Power Commission's Natural Gas Investigation Hearing — Houston, Texas. Changed from Nov. 27 at Dallas.

Independent Natural Gas Association Annual Membership Meeting—Texas State Hotel, Houston, Jan. 28.

May

National Association of Corrosion Engineers Annual Meeting—President Hotel, Kansas City, Mo., May 7-9.

June

Canadian Gas Association, 39th Annual Convention — Mannoir Richelieu Hotel, Murray Bay, Quebec, June 18-21.

Hartson Named Chairman A.G.A. Ad Committee

D. P. Hartson, vice-president, Equitable Gas Co., Pittsburgh, Pa., has been elected chairman of the Committee on National Advertising of the American Gas Association. This committee exercises general supervision over the gas industry's national advertising program which has been in continuous operation for 10 years. The budget for the current year calls for an expenditure of $857,000.

D. P. Hartson

Hartson has served several years as a member of the committee representing gas companies situated in Western Pennsylvania, Ohio and West Virginia.

Joining the Equitable Gas Company as distribution engineer in October, 1920, Mr. Hartson has held various positions including gas engineer, superintendent of production and transportation, manager of the system development department, and since 1938 has been a director of the company. He is a past chairman of the distribution committee of the American Gas Association and has been an active leader of Technical Section activities.

In his new appointment as chairman, Hartson fills the position left vacant by **H. Carl Wolf,** who became managing director of the Association, October 1st.

R. G. Taber, president of the Atlanta Gas Light Co., Atlanta, Ga., has been elected a member of the Committee on National Advertising to represent participating gas companies in North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama and Mississippi. These companies were formerly represented on the Committee by Mr. Wolf.

A.G.A. Personnel Conference Continues Sessions

The American Gas Association Personnel Conference held its 10th session in Shreveport, La., on Sept. 25, with M. V. Cousins, personnel director of the United Gas Pipe Line Co. and chairman of the Conference, presiding. Among major topics discussed were reduction of the work-week to pre-war levels; employee training and handling of returning war veterans.

H. D. Carmouche, general superintendent of the Houston Pipe Line Co. was elected chairman of the conference and W. H. Senyard, director of personnel, Louisiana Power & Light Co., New Orleans, vice chairman.

The first session of the Personnel Conference in the territory of the Mid-West Gas Association was held at the Fontenelle Hotel, Omaha, Neb., on Sept. 27, with more than 30 attending. The new territory was added to the Conference as requested by formal action at the 1945 annual meeting of the Mid-West Gas Association. R. B. Harkins, personnel director, Panhandle Eastern Pipe Line Co., chairman of the Conference, presided.

P.C.G.A. Holds Business Meeting

STRICTLY business was the order of the day when 38 top executives of Western gas and appliance manufacturing companies met at Del Monte, Pebble Beach, Calif., Oct. 3-4, for the 52nd annual meeting of the Pacific Coast Gas Assoiation. Congestion in hotel and transportation facilities restricted the attendance.

Highlight of the meeting was the address by E. R. Acker, chairman of the American Gas Association's Special Committee on the Research and Promotional Plan. A summary appears on page 19.

Following tabulation of a vote by mail Harvey W. Edmund, Coast Counties Gas & Electric Co., was elected president, LeRoy M. Edwards, Pacific Lighting Corp., vice president, and D. G. Martin, Pacific Gas and Electric Co., treasurer.

For its constructive recommendations leading to peace time sales operation, the Basford Trophy was awarded to the Sales and Advertising Section, W. M. Jacobs, General Chairman.

A special Technical Section Awards Committee, consisting of C. P. de Jonge, San Diego Gas & Electric Co., and H. P. George, Southern California Gas Co., after reviewing technical papers presented during 1943, 1944, and 1945, voted honorable mention to the paper, "Deviation of Natural Gas from Boyle's Law," by R. V. Dunkle, Pacific Gas and Electric Co. (GAS, Oct., 1944), and to the paper, "Natural Gas Production and Utilization in California," by R. M. Bauer, Southern California Gas Co. (GAS, Oct., 1945).

It was the consensus of opinion that the small group meetings introduced by Managing Director Clifford Johnstone during the war were most effective. Meetings for the coming year in general will follow this round table conference plan.

The business sessions were confined to presentation of Section and Committee reports planning for the coming vear and transaction of Association business.

Technical Section plans for the coming year will emphasize research in kitchen ventilation and standardization of installation of appliances.

It was suggested that Accounting Section meetings be held jointly with the Pacific Coast Electrical Association and that members of the accounting group form a council to provide sales people with information that can be used to their advantage.

In connection with the Sales and Advertising Section, retiring chairman Jacobs outlined the work that had been done in developing a sizing chart for automatic storage water heaters. (See page 26.)

Domestic sales plans for next year will emphasize the formation of standards of desired qualities in new sales personnel, sales training, and promotion of the New Freedom Gas Kitchen. Studies will be undertaken of cooperative plans for dealers, salesmen's compensation, an effective employee prospect plan, and means of replacing victory model appliances.

Section chairmen appointed by President Edmund for the coming year were: *Accounting Section*: J. W. Vanier, Southern California Gas Co. Subject Sponsors: purchasing, R. E. Mackersie, Pacific Gas and Electric Co.; internal audits, F. J. O'Brien, Southern California Gas Co.; payrolls, J. A. Talley, California Electric Power Co.; commercial problems, C. E. Messinger, San Diego Gas & Electric Co.

Sales and Advertising Section: General Chairman, R. L. Hayden, Coast Counties Gas & Electric Co. Subject Sponsors: domestic sales, Harry A. Lee, Pacific Gas & Electric Co.; commercial and industrial sales, R. D. MacMahon, Southern California Gas Co.; Home Service, Cleo Filsinger, Pacific Gas & Electric Co.

Technical Section: General Chairman, D. E. Farmer, Portland Gas & Coke Co. Subject Sponsors: distribution, K. B. Anderson, Coast Counties Gas & Electric Co.; transmission, R. T. Peterson, Pacific Gas and Electric Co.; utilization, Harvey Derr, Pacific Gas and Electric Co.; accident prevention, A. W. Turner, Southern California Gas Co.; automotive transportation, William Minyard, Southern Counties Gas Co.

IPAA Officers Elected At 16th Annual Meeting

Major B. A. Hardey, independent producer of Sheveport, La., was elected president of the Independent Petroleum Association of America at the 16th annual meeting which adjourned in Tulsa Oct. 17. Harold B. Fell of Ardmore, Okla., has been reelected executive vice president. Russell B. Brown of Washington, D. C., general counsel, C. E. Buchner, executive manager of Tulsa and N. T. Gilbert, treasurer, also of Tulsa, were reelected.

PEOPLE

• **Paul W. Craig** has been appointed industrial and commercial sales manager, Equitable Gas Co., it has been announced by **Ray Little,** general sales manager for the company.

Paul Craig

Craig entered the employ of the Equitable Gas Co. in 1924, as a cadet engineer, and held positions as district foreman, field engineer, supervisor of industrial installations, supervisor of heavy industrial sales, and manager of the Industrial Sales Department prior to his present appointment.

Leon S. Maehling has been appointed heating sales manager for the company. Maehling entered the employ of the company in 1925, and has since served in the positions of superintendent of appliance service, and manager of commercial sales and utilization engineer.

Donald E. Brashear has been appointed merchandise manager of the company. In this capacity, he will supervise the merchandising of domestic appliances in company-operated stores.

Brashear entered the employ of the Duquesne Light Co. in 1921, as a lighting salesman, and has since served in various positions in the Residential Sales Departments of the Equitable Gas and Duquesne Light Companies.

Chester L. Gollings has been appointed office manager, Sales Department.

• **Kendall H. Flint,** former chief engineer of Testing and Inspection at the American Gas Association Testing Laboratories, on October 1 joined the Ingersoll Steel and Disc Division of the Borg-Warner Corp. with headquarters in Kalamazoo, Mich. In his new position Flint will have charge of the establishment of a new gas heating division of the company which is entering the gas field for the first time, formerly having confined its heating appliance line to oil and coal.

• **Walter J. Garner** has been appointed field supervisor in the compressor department of Lone Star Gas Co., according to a recent announcement by **B. L. Rogers,** superintendent of compressor stations.

• At a meeting of the Board of Directors of the Michigan Consolidated Gas Co. in Detroit, August 17, **Henry Tuttle** was elected treasurer of the Company. Tuttle formerly was vice president-controller, and now is vice president-treasurer. Entering the company's employ in 1920, Tuttle was a service man in the Shop department. Subsequently he held positions of increasing responsibility until 1937, when he was appointed assistant treasurer and assistant secretary. In 1938 he was appointed first assistant treasurer and in November, 1940 was made vice president and controller.

At the same meeting **Carter E. Shields** was appointed controller to succeed Tuttle. Shields became associated with the Michigan Consolidated in 1920 as an accounting clerk. In 1927 he was promoted to accounting supervisor and in 1939 was appointed assistant treasurer and in 1940 became assistant controller.

• The Union Light, Heat & Power Co., Inc. of Cincinnati has announced promotions for **Elmer H. Brockman** and **Melvin J. Wuest.** Brockman becomes supervisor of the Accounting and Meter Reading department and Wuest was made supervisor of the Credit and Service department.

• The Board of Directors of Standard of California on Oct. 25 elevated President **H. D. Collier** to the chairmanship of the board and elected **R. G. Follis** to the presidency. Follis first worked for Standard of California in 1924 at the Richmond Refinery. After service both in Bakersfield and El Paso, he was brought back to San Franciscc in 1932, and in 1940 was made general manager of the manufacturing department.

• **Glenn G. Bartle,** natural gas geologist and former university dean, has joined the New York staff of **E. Holley Poe and Associates,** natural gas consultants.

G. G. Bartle

Dr. Bartle, recently discharged from the Navy, served as the commanding officer of the V-12 unit at Swarthmore College. During the nine years preceding his induction into the Navy in 1942, Dr. Bartle was on the faculty of the University of Kansas City.

Dr. Bartle is the author of several technical studies of the geology and production of natural gas.

Hilding Carlson, former government economist and industrial editor, has also joined the firm. Until recently Carlson was the New York regional economist for the United States Bureau of Labor Statistics. Previously, he held the same position in the Cleveland region.

He will direct the firm's research in the economics and statistics of the natural gas industry and will serve also as the administrative officer. The firm has offices in New York, Washington and Chicago.

• **Brigadier General E. F. Jeffe,** who left Consolidated Edison Co. of New York in May, 1942, to enter military service, was elected vice-president of the company on September 25. **L. A. Scofield,** general sales manager, was elected assistant vice-president. **N. T. Sellman,** formerly assistant vice-president, has resigned and will give his entire time to his duties with Westchester Lighting Company, where he is first vice-president.

Jeffe served as executive assistant to the executive vice-chairman of the War Production Board and also as executive secretary and a member of the Production Executive Committee of the Board. For these services he received the Legion of Merit Medal.

• **J. N. Greene,** president, Alabama Gas Co., has been elected a director of the American Gas Association, to fill a vacancy until Nov. 8, 1945, caused by the resignation of **H. Carl Wolf,** who became managing director of the Association on October 1.

• **Henry Fink,** general manager, Michigan Consolidated Gas Co., was elected a director to fill the unexpired term ending Oct. 31, 1946, caused by the death of **John W. Batten,** former president of the Michigan Consolidated Gas Co.

• **Chester A. Thorp,** gas utilization engineer, will join the staff of the American Gas Association Testing Laboratories in Cleveland on October 15 in an administrative capacity, according to **R. M. Canner,** director.

Widely known to the California gas industry, Thorp formerly headed the Gas Appliance Laboratory of Southern

The string around her finger means . . .

"IT'S THE HARDWICK RANGE I WANT"

For PERFORMANCE

HARDWICK Ranges are known everywhere as ranges built to the highest standards. Housewives have made a note of that! Sixty-six years of continuous manufacture have brought baking and cooking perfection, with every part of the range utilized for convenience and economy. Housewives remember that! New war-born techniques bring the ultimate in gas range efficiency to the new HARDWICK models. Housewives expect *and will receive* the best from HARDWICK!

For VALUE

HARDWICK Ranges are built for national acceptance. Smart styling, quality construction and superb cooking performance are dominant characteristics. These and many other attractive, practical features help to make HARDWICK Ranges the unsurpassed values they are today. Housewives are remembering these facts!

Illustrated above is HARDWICK'S popular 18" wide oven, divided top range now being featured by leading utilities throughout the nation. The enthusiastic demand for this range far exceeds the present supply but more of them will be available in the months ahead.

HARDWICK Gas RANGES

SPACE 1530-31 AMERICAN FURNITURE MART • CHICAGO

HARDWICK STOVE COMPANY • Cleveland, Tennessee

California and Southern Counties Gas companies in Los Angeles.

Thorp was commissioned in the Navy as a Lieutenant and was soon promoted to Lt. Commander. During the past 3 years he has been assigned to administrative duties in connection with ordnance contracts in Newport, Rhode Island, Washington, D. C., Canton, Ohio, and Bloomington, Ind.

• **H. C. Wehnert,** chief engineer of the Laclede Gas Co. of St. Louis, Mo., for the past 20 years, resigned his position on Oct. 1, 1945. Wehnert came to Laclede in 1906 as a cadet engineer, soon after his graduation from Purdue University.

John H. Doerres, who has been superintendent of Laclede's by-product coke station for 20 years, will succeed Wehnert. **Erwin Blind,** who has been assistant to Doerres, has been appointed to fill the latter's former position.

Other appointments include: **E. L. Horner,** superintendent of manufacture; **Dave Turk,** superintendent of water gas manufacture; **G. B. Brothers,** assistant superintendent of water gas manufacture.

• **Russell V. Myer,** until recently superintendent of war production and former test floor supervisor last month was named chief engineer of the Testing Department and **Ralph E. Cramer,** formerly assistant chief engineer of the combined department, was appointed chief engineer of the newly created Inspection Department, A.G.A. Testing Laboratories, according to an announcement from Director **R. M. Conner.**

Myer, who has been active in testing activities both at the Cleveland and Los Angeles Laboratories for nearly nine years replaces **Kendall H. Flint.**

Mr. Cramer will have served 10 years with the Laboratories in January and has held responsible positions associated with testing, inspection, research and requirements activities for the major portion of his Laboratories' career.

Manufacturers

• **J. V. Thomas,** president of Natural Gas Equipment, Inc., has made the following announcement of changes in personnel.

R. L. Grutzmacher

Robert L. Grutzmacher is now executive vice president of the firm, with headquarters in 540 Petroleum Building, Los Angeles.

Grutzmacher has been associated with Natural Gas Equipment for the past 15 years as manager of the San Francisco office, handling burner and regulator equipment, and space heating equipment. Prior to his employment by Natural Gas Equipment Inc., he was industrial gas engineer in the San Francisco division of Pacific Gas & Electric Co.

Other changes within the organization announced at this time include **James C. (Mac) McCluskey** as vice president in charge of sales, and **H. F. (Jonesy) Jones** is now at his old post as service engineer after having been engaged in the production of Wilgus Regulators for the past two years.

A. C. Staat has been transferred to the San Francisco office of the company.

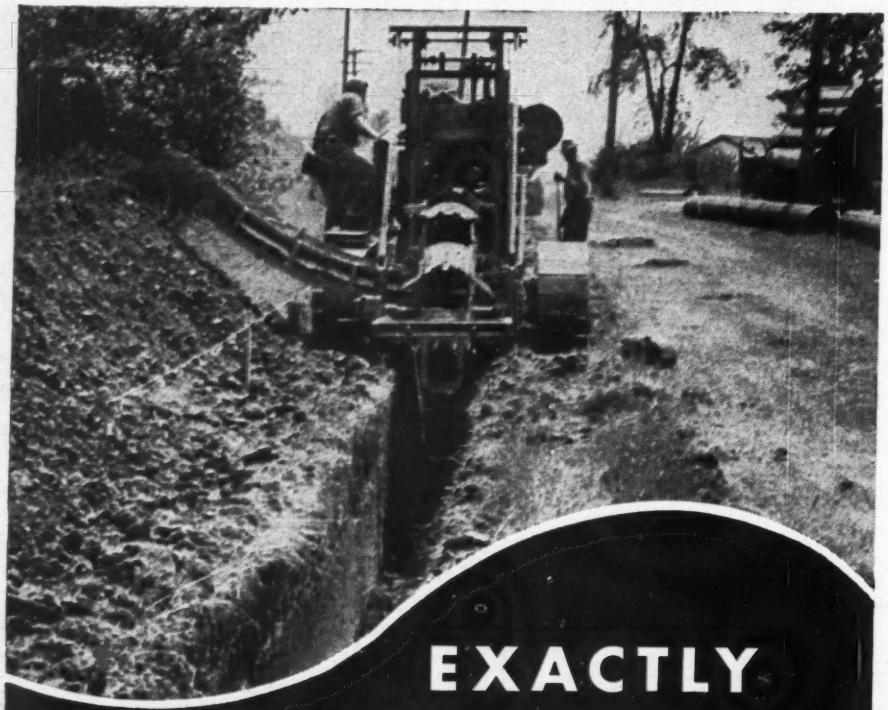
• **Arthur I. Wallace** will assume duties as of October 1 as vice president of the **A. A. Electric Supply Co.,** 4012 Ogden Ave., Chicago. Wallace formerly was Regional Utility Engineer for the War Production Board.

The A. A. Electric Supply Co. wholesales gas and electric equipment in both the distribution and appliance field; franchises include nationally known products.

• **Elroy Payne,** president of Payne Furnace Co., Beverly Hills, Calif., one of the Dresser Industries, announced the appointment of **Charles F. Cushing,** as vice president and assistant general manager.

Cushing leaves the post of distribution manager of Bryant Heater Co., another Dresser member company, with whom he has been associated since 1935, to assume his duties at Payne on November 1. Prior to joining Bryant, Cushing was connected with Frigidaire Corp. and Davison Chemical Corp.

"CLEVELANDS"



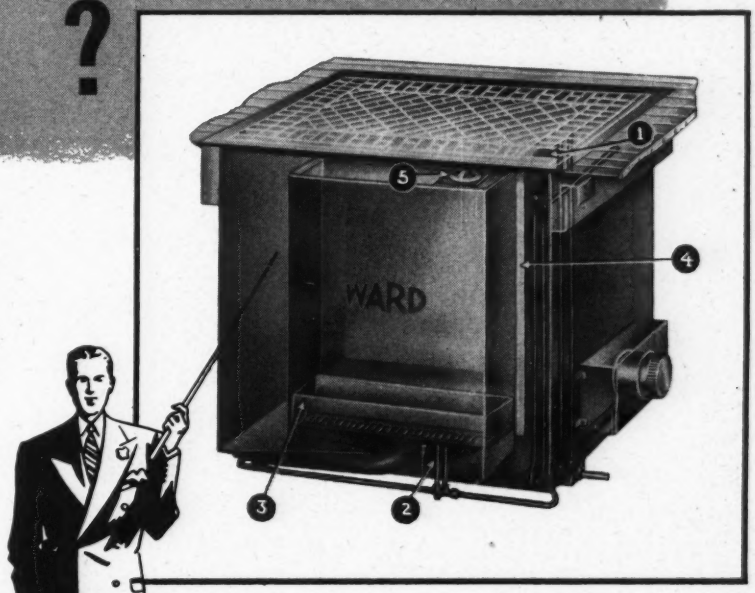
EXACTLY MEET YOUR TRENCHING REQUIREMENTS

for Oil—Gas—Gasoline—Sewer and Water Lines—Drainage —Telephone and Telegraph Conduit—Building Foundations

THE CLEVELAND TRENCHER COMPANY
20100 ST. CLAIR AVE. • CLEVELAND, OHIO
CLEVELANDS Save More . . . Because They Do More

FLOOR FURNACE FACTS . . . NO. 4

WHAT ARE THE EXCLUSIVE FEATURES OF A WARD FLOOR FURNACE ?



THE WARD FLOOR FURNACE of today is soundly designed and engineered out of the experience gained in building floor furnaces since 1909. Among its advantages are these definite "selling features":

1. BILT-IN THERMO-CONTROL. Automatically turns furnace *on* and *off* to keep the warmth of room as desired.

2. AUTOMATIC PILOT. A safety device it has taken years to perfect. If gas pressure drops or flame becomes extinguished, pilot shuts off gas flow to furnace instantly.

3. FLAME FENDER. Heavy cast iron construction. Keeps flame from impinging on sides of heating element and is absolute insurance against burning out. Adds years to the life of the furnace.

4. INSULATED INNER SHELL. Asbestos insulation keeps temperature in outer shell low, assuring steady, uninterrupted cold air return.

5. SEALED LIGHTER DOOR. Brass door, hermetically seals chamber, preventing escape of products of combustion into room.

The Ward Floor Furnace is a sturdy "complete package," entirely self-contained, with all controls and accessories built in. No wires to run, no difficult installation problem.

As soon as they are again available to new dealers, you'll find a vast market for Wards with their economical, evenly-circulated heat and trouble-free operation.

WARD HEATER COMPANY

36 years of "KNOW-HOW"

1800 WEST WASHINGTON BOULEVARD • LOS ANGELES 7, CALIFORNIA

Roy A. Bass

• **Roy A. Bass** has recently been appointed director of distribution of the Dresser Industries, Inc., Cleveland, O., a new post. Dresser Industries is the parent organization of 14 companies serving oil, gas and industrial markets and has 22 plants located throughout the country.

In this position he will be responsible for the national program of Dresser, and its member companies in the establishment and expansion of distribution in industrial centers.

An engineering graduate of Cornell, Bass has been active in both sales and marketing for a number of years. Before assuming his present duties, he was Buffalo district sales manager for Ross Heater & Mfg. Co., Inc., Buffalo, N. Y., with whom he has been connected for the past 11 years.

• **Craig Espy,** Pittsburgh district manager of The "Oil and Gas Journal," and at one time vice president of Western Business Papers, Inc., publishers of "GAS," and "Butane-Propane News" has resigned from the Journal, effective Oct. 15, to become Southwestern sales representative, at Dallas, Tex. of California Pellet Mill Co. of San Francisco.

• **Col. Alan P. Tappan,** vice-president of the Tappan Stove Co., Mansfield, Ohio, has been elected president of the firm to succeed **Paul R. Tappan** who has been appointed chairman of the executive committee, it was announced today following a special meeting of the board of directors.

Col. A. P. Tappan

The directors also announced that **A. C. Rhoads,** treasurer; **R. M. Lamb,** former plant superintendent; and **W. Richard Tappan,** former war products manager, have been named vice-presidents. The new president started his business career with the Tappan Stove Co. in 1919 when he was named territorial representative for the Chicago district. He was returned to the main office in 1923 and was made plant superintendent. In 1931, he was made vice-president in charge of sales. A veteran of both world wars, Colonel Tappan returned to pre-war duties on September 13, as vice-president and general manager.

• **A. F. Rice** has been appointed manager of appliance sales, Pacific Coast division, Rheem Manufacturing Co., with headquarters in Los Angeles. Rice's territory consists of California, Arizona, Utah, Montana, Idaho, Nevada, Oregon and Washington.

A. F. Rice

Rice previously held positions since 1920, with Cribben Sexton Co., Los Angeles, as branch manager; general manager, Western Stove Co., Culver City, Calif.; sales manager, H. R. Basford Co., Los Angeles and San Francisco; manager, market division, Southern California Gas Co., Los Angeles, and general manager, Occidental Stove Co., San Francisco.

• **J. Harold Merrick** has been elected a vice president of Rheem Manufacturing Co. Merrick joined the Rheem organization in 1943 as the company's general attorney and recently was named president of a newly-formed subsidiary, Rheem Manufacturing Co. of Brazil, Inc. Before joining Rheem, he was with Remington Rand, Inc. and previous to that was South American general attorney for International Telephone & Telegraph Co.

• **Richard S. Rheem** and **L. B. Keplinger** have announced Keplinger's resignation as vice president and director of Rheem Manufacturing Co. Keplinger leaves to assume his duties as president and general manager of the Steel Shipping Container Institute, Inc., New York City.

NO COMPUTATION NECESSARY
Readings, accurate to the second decimal, are read directly from the chart. Readings to the third decimal can be made by easy approximation.
ARCCO-ANUBIS GAS GRAVITOMETERS
Once calibrated and properly installed, the Arcco-Anubis Gas Gravitometer requires no further attention. The unit is practically frictionless. No electric motors, pressure regulating valves or other complex equipment to get out of order. The gas flow is continuous, thus the most minute changes in specific gravity are recorded the instant they occur.
Arcco-Anubis Gas Gravitometers have proved themselves by giving accurate readings under the most adverse working conditions. Hundreds are in continuous use, in pipe lines and refineries of major companies all over the country.
SEND FOR BULLETIN NO. 101
AMERICAN
RECORDING CHART CO.
3113 E. 11th St. Los Angeles 23, Calif.
SEND FOR COMPLETE LIST OF ARCCO CHARTS

COMING

Jewels of Cooking Performance

GEO. D. ROPER CORPORATION
ROCKFORD, ILLINOIS

• **Keith B. Miller,** sales manager of the Tappan Stove Co., has announced the appointment of **Donald S. Sharp,** director of retail sales training, as assistant sales manager.

Sharp, former southern Ohio representative for Tappan's, was assigned to direct retail sales training work in August, 1944. Prior to that time he had served as procurement specialist and directed the organization of a contract termination branch for the Jeffersonville, Ind., quartermaster corp.

• **Surface Combustion Corp.,** Toledo, recently announced the following new appointments: **Harold J. McKay,** service engineer in the New York district; **Leo B. McCoy,** sales representative in the New Jersey territory; **Carl H. Langendorf,** sales and service engineer in St. Louis territory; **Mark H. Cummings,** sales representative in the South Bend, Ind., territory; and **Thomas H. Langan,** assistant to the manager of the Cleveland district office.

• **James B. Finger** has been named divisional sales manager of the Coroaire Heater Corp. by **A. W. Conley,** vice president and general manager of the firm. Finger comes to the Cleveland company from the National Association of Manufacturers headquarters in New York where he served as director of promotion.

WARREN
LIQUEFIED PETROLEUM GAS

CONSULT US ON SMALL CITY PLANT CONVERSION

Using Butane or Protane

Small city gas distribution systems confronted with the high costs of labor, equipment and maintenance for manufacturing gas, can insure an excellent and dependable service by converting with little expense to Liquefied Petroleum Gas.

The small additional plant investment requires a minimum of labor, repairs and replacements and insures operation on a profitable basis. Warren's greatly expanded facilities provide increased production and delivery service adequate to meet your needs.

Other small gas distribution system operators are including Warren's broad experience, engineering advice and consultation service in their plans to convert to Liquefied Petroleum Gas. Investigate Warren's products and services today. Your inquiries incur no obligation.

WARREN PETROLEUM CORPORATION
Tulsa, Oklahoma Houston, Texas

Obituaries

• **William H. Taylor,** 65, former president of the Philadelphia Electric Co., died Oct. 9 in Ventnor, N. J.

Practically his entire business and utility experience was spent with The United Gas Improvement Co. properties and interests. He started as a construction engineer for U.G.I., supervising installation of gas and electric equipment in various U.G.I. plants throughout the country.

Subsequently Taylor served the Omaha Gas Co., Omaha, Neb., Fulton County Gas & Electric Co., Gloversville, N. Y., Charleston, S. C., Consolidated Railway and Lighting Co., Counties Gas and Electric Co., of Ardmore, Pa., and the Georgia Railway and Power Co., of Atlanta, in executive capacities.

In 1927 he was recalled to Philadelphia and became operating vice president of the U.G.I. A year later, he was elected president and a director of the Philadelphia Electric Co. He retired in April, 1940.

• **E. J. Shermire,** 46, sales manager of Garland commercial equipment, Detroit-Michigan Stove Co., died suddenly Oct. 3 in Birmingham, Ala. Shermire became associated with Detroit-Michigan Stove Co. in 1936 as a district manager. In May, 1939, he was appointed sales manager.

• **John L. Virtue,** senior accountant and chief voucher clerk in the Denver Accounting department of the Public Service Co. of Colorado, died September 11 after an illness of several weeks. He was 45 years of age. Virtue had been with the company 21 years starting as a clerk in the Denver Transportation department.

• **L. Howard Goldbright,** vice president and treasurer of the Heating and Plumbing Finance Corp., a subsidiary of the American Radiator & Standard Sanitary Corp., died in White Plains, New York, Sept. 1. He was also vice president of Heating and Plumbing Finance Ltd., Canada.

• **Zack L. Pape,** supervising head of the Customers' Service Department of the City Public Service Board, San Antonio, Texas, died August 27 after a brief illness. Pape had served 34 years with the Board where he began as night PBX operator.

• **Maurice D. Read,** 45, secretary and assistant treasurer of Minneapolis Gas Light Co. died of a heart attack Sept. 1.

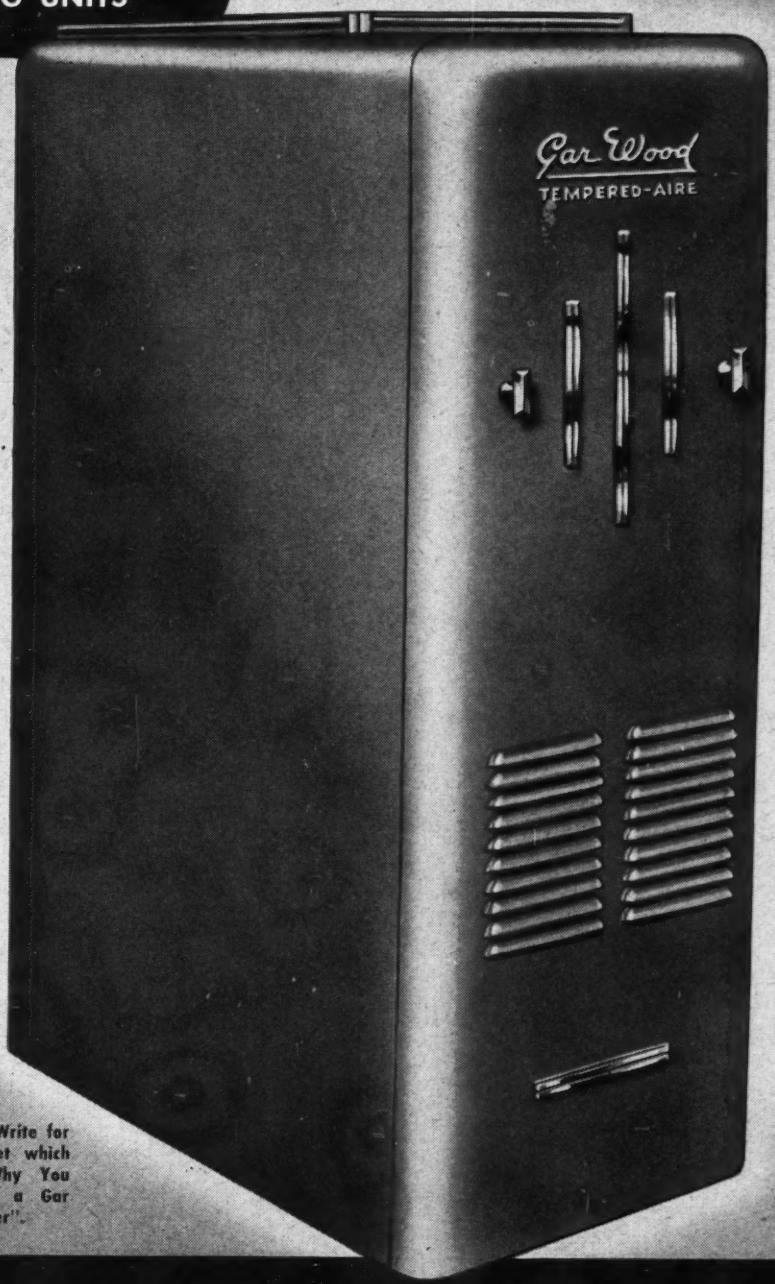
Read came to Minneapolis in 1935 from Benton Harbor, Mich., where he had been associated with the gas company there.

• **Wade Page,** 53, superintendent of distribution for Lone Star Gas Company's Fort Worth Division, died recently. He had been with Lone Star since his return from World War I.

THEY'RE NOT AVAILABLE NOW . . . BUT

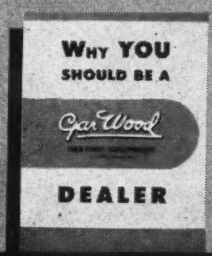
The new gas-fired Tempered-Aire Heating Units are destined to reach a new high in popularity. That's no wonder when you consider the thousands of owners who know from ACTUAL EXPERIENCE that Tempered-Aire stands for high efficiency and unusual economy of operation. Home owners *talk* about that kind of performance . . . it's important to them. And here's a word to the wise: the new Tempered-Aire models are better than ever before . . . in performance, eye-appeal and SALES APPEAL.

Gar Wood GAS-FIRED TEMPERED-AIRE HOME HEATING UNITS



HERE'S WHY It's Easy to Sell Tempered-Aire

- ★ Advanced Gar Wood Engineering
- ★ Tried and Proved for more than 10 Years . . . plus recent developments
- ★ Completely Automatic
- ★ Beautifully Designed Die-Formed Cabinet
- ★ Now More Efficient than Ever
- ★ Proved Economy of Operation
- ★ More Compact . . . Smaller in Size



DEALERS: Write for this booklet which shows "Why You Should Be a Gar Wood Dealer".

GAR WOOD INDUSTRIES, INC., HEATING DIVISION

7924 RIOPELLE STREET DETROIT 11, MICHIGAN

Canadian Distributors: Engineering Industries, Ltd., 282 Dupont St., Toronto, Ont.

HOISTS and BODIES . . . WINCHES and CRANES . . . TANKS . . . ROAD MACHINERY . . . MOTOR BOATS

Utility Offers Territorial Information Service

The Commonwealth Edison group of companies Oct. 26 announced the appointment of Milburn L. Forth as industrial economist to head up the research activities of their recently created territorial information department in Chicago.

A native of Evanston and a graduate of Indiana University, Forth has served as economist for WPB in Washington for the past three years.

The new department, staffed with statisticians, industrial specialists, tax analysts, and other business experts, will assemble and make available factual data about Chicago and Northern Illinois as an aid to business, industry and agriculture. It will gather data on taxes, transportation, markets, labor supply, residential construction, raw materials, industrial production, distribution and other factors having a bearing on industrial development of the area.

$40,000 Plant to be Installed

The Alabama Gas Co., Montgomery, Ala., has been granted authority by the Alabama Service Commission to install a $40,000 natural gas distribution plant at Northport.

● Non-metallic Transite Flue Pipe not only is rustproof, it is light in weight . . . easy to install and support . . . can be cut to fit on the job. Neat and attractive in appearance, it needs no painting. 2" to 12" sizes; round and oval. Complete line of fittings and accessories.

For details, write for booklet TR-13A. Johns-Manville, 22 East 40th Street, New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville TRANSITE FLUE PIPE For venting gas-burning appliances

FPC Accepts Rates Filed By Colorado Interstate

New rate schedules filed by Colorado Interstate Gas Co. which reduce its interstate wholesale natural gas rates by $2,793,000 a year based on its 1944 sales have been accepted by the Federal Power Commission. In accordance with the commission's order of March 18, 1942, which was upheld by the Supreme Court of the United States, the new rates are to be made effective on all bills rendered on and after May 20, 1942.

The company will be required to refund to customers more than $8,500,000, representing the difference between the reduced rates which the commission ordered to be put into effect in May, 1942, and rates the company has continued to charge during the three years in which it unsuccessfully contested the commission's order in the court.

The new rates will effect a reduction of 41% in the company's revenues from the sale of gas to distribution companies in Colorado and to two pipeline companies serving communities in Colorado, Wyoming, Kansas, Nebraska, Iowa, Illinois and Indiana, and will cut the company's average rates from 26c per mcf. cu. ft. to 15c to customers served from its Denver pipe line.

Gas Service Co. Returns To 40-Hour Week

The Gas Service Co., Kansas City Gas Co., and The Wyandotte County Gas Co. on October 1 returned to the 40-hour work week, according to an announcement by B. C. Adams, president of the three utilities. In connection with the change back to the 40-hour week, the company determined that all employees receive the same pay which they receive for 44 hours, or a base pay increase of 15%.

The General Office hours are from Monday through Friday, 8:30 a.m. to 12:00 noon; 1:00 p.m. to 4:45 p.m.; Saturday hours from 8:15 a.m. to 12:00 noon.

Supplers Hear About German Gas Plant Operation

Bernard V. Pfeiffer, manager of gas operations of the United Gas Improvement Co., at an informal round up of the Gild of Ancient Supplers August 17, reported "off the record" on what he learned of German gas plant operations during a three month tour of that country.

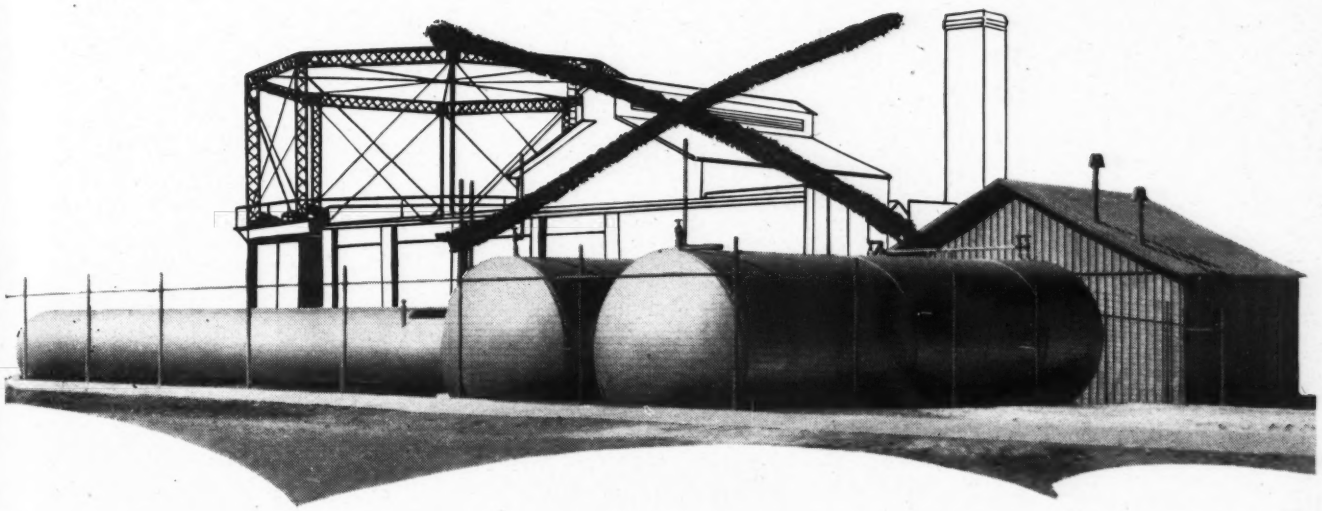
Pfeiffer, commissioned a provisional colonel in the army for the trip, toured Germany with several other industrial investigators and reported to the technical industrial intelligence committee on what the Nazis accomplished in the gas industry that might prove helpful in this country.

Oven Co. Opens New Office

The Industrial Oven Engineering Co. of Cleveland has opened a branch office in Chicago, located at 332 So. Michigan Ave. In charge of the new office are H. W. Munday and F. T. Greaves, both graduate engineers and specialists in industrial heating problems.

CONVERSION TO PROPANE-AIR

is no problem to you—



because...

Phillips engineers are well experienced in the task of converting water gas or coal gas plants to automatic undiluted propane or propane-air systems.

These men are gas specialists, well fortified with continued experience that dates back to 1928 when Phillips pioneered the very first installations of liquefied petroleum gas-air for gas plants. This valuable knowledge is at your disposal. Further details concerning the profit possibilities of conversion are available by contacting the District Office nearest you.

Phillips
BUTANE
PROPANE

PHILLIPS PETROLEUM COMPANY

Philgas Division

BARTLESVILLE, OKLAHOMA

Branch Offices in NEW YORK, CHICAGO, PHILADELPHIA, MILWAUKEE, DETROIT, ST. LOUIS, SHREVEPORT, AMARILLO, HIBBING, DENVER

PIPELINE NEWS

• **Hope Natural Gas Co.** has applied to FPC for certificate of public convenience and necessity to construct and operate five compressors and auxiliary equipment at its Hastings, W. Va., station. Authorization to abandon certain other existing facilities is also requested.

The company proposes to install five steam-engine driven compressors of 2000 h.p. each and other auxiliary station compressor equipment and to abandon 12 existing compressor units aggregating 17,025 h.p. Total cost is estimated at $905,160.

• The El Paso Natural Gas Co. has reconditioned approximately 12½ miles of the 12¾-in. line on the El Paso-Douglas line. Equipment and crews have been moved to Douglas to start clearing right-of-way and to do preliminary work for the laying of 18 miles of new 8⅝-in. line and the taking up and relaying of a like amount of 6⅝-in. line.

The company also plans 19.4 miles of loop on a 10¾-in. line are to be laid. Also in the Jal area 12 miles of 5½-in. line are to be laid from the Keystone Line to Lyman Plant in Winkler County.

At Gasoline Plant No. 2 high pressure absorbers are being installed in order to obtain additional butane and propane from the gas. All gas to be used for transmission is to be put through these three high pressure absorbers. Also at Gasoline Plant No. 2 a glycolamine combination treating and dehydration plant is being installed.

• **The Pacific Gas and Electric Co.** is spending $1,900,000 to extend and improve its natural gas facilities throughout Northern and Central California. On the program are $1,000,000 worth of additions and betterments for transmission pipelines and $900,000 worth of new distribution mains in numerous communities. The purpose of the work is to take care of gas loading increases definitely indicated by comprehensive surveys.

• Several important projects costing approximately $1,300,000 which will reinforce the **Southern California Gas Co.'s** transmission system and provide additional gas for the winter load, are now under way, according to H. P. George, manager of Production and Transmission.

Included among the projects are a gas well about to be drilled in the Playa del Rey field, additional piping and facilities for the Del Rey Storage project, a new 26-in. line to Santa Fe Springs, and a reinforcing line in the San Joaquin Valley Division which will tap a new source of supply at the Burrell field above Lemoore.

• The Federal Power Commission has postponed from Oct. 15 to 10 a. m., Jan. 15, 1946 the hearing on the Metropolitan Eastern Corp.'s application for a certificate to construct and operate approximately 825 miles of 18-in. natural gas transmission pipeline extending northeasterly from the Carthage Field, Panola County, Texas, to a point near Hamilton, Ohio. The postponement was made in order to permit the National Coal Association and United Mine Workers of America to prepare data and continue certain negotiations necessary before a hearing is held.

• A new 175-mile pipe line costing more than $3,000,000 to link the San Joaquin Valley oil fields with San Francisco Bay, will be built by **Standard of California** within the next few months. Construction is expected to start in December, with completion scheduled for April.

This line will permit the Stanpac line to be reconverted to transportation of natural gas.

• The Kansas Power & Light Co. is constructing 15 miles of 16-in. steel-welded natural gas line from the Lake City field in Barber County, Kans., to a connection with its main transmission system near Pratt, Kans.

The line will have a maximum capacity of 60,000,000 cu. ft. per day and will increase the supply of gas for the entire system. M. E. White of McPherson, Kans., has the contract for laying the line.

A Glycol-type dehydration plant is being built in the field with a capacity of 60,000,000 cu. ft. per day. Dresser Engineering Co., Tulsa, Okla., has the contract.

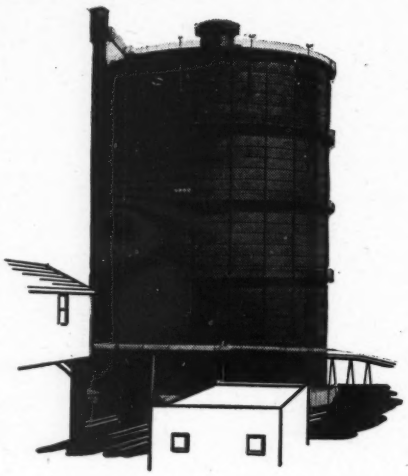
DO YOU HAVE A *tank problem?*

If you do we have the facilities to supply the answers regarding

★ **Tank Design**
An engineering department with experience and capabilities to tackle any practical size or shape, high or low-pressure tank, or special processing equipment.

★ **Tank Fabrication**
A factory capable of fabricating six million pounds of materials per month. Equipment includes the most modern forging, welding, shearing, punching and riveting equipment.

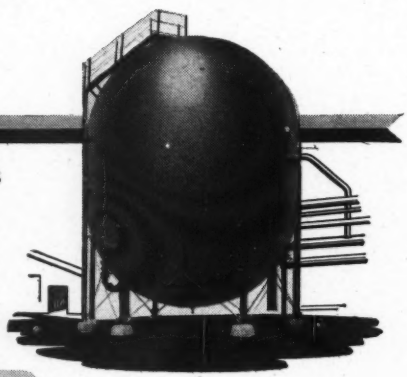
★ **Tank Erection**
Many unusual cost-reducing kinds of equipment specially designed by Stacey Brothers. We have erected thousands of tanks with capacities ranging up to ten million cubic feet.



A Stacey Brothers 1,500,000 cubic foot Dry Seal Gas Holder.

★ **Special Structures and Products**
We design, produce and install literally hundreds of different kinds of special structures and products of aluminum, steel and steel alloys.

Stacey Brothers Gas Construction Co.
One of the Dresser Industries
5535 Vine Street Cincinnati, Ohio

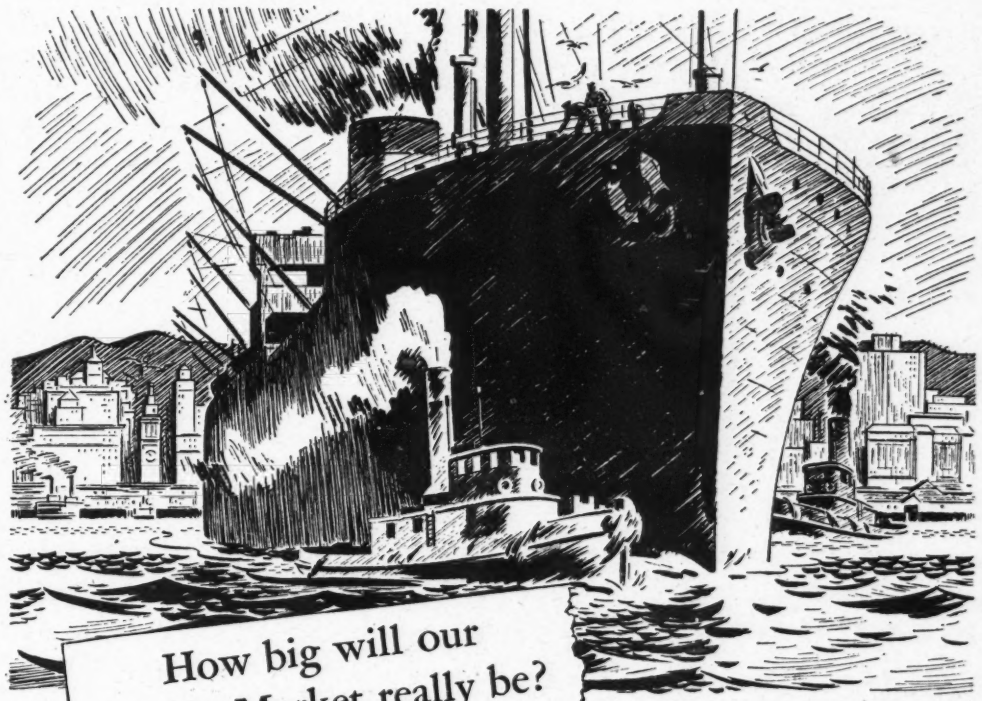


A Stacey Brothers vertical high-pressure tank.

Stacey Brothers TANKS

Northern California Speaks to the Nation

NORTHERN CALIFORNIA...gateway to a billion new customers



How big will our Pacific Market really be?

Economists estimate that America's trade with the billion people who live around the great Pacific Basin can amount to at least seven billion dollars a year...more than double what it did before the war.

The Dutch East Indies, for example, are planning to spend close to two and a half billion dollars for the rehabilitation of their islands. China is making arrangements to buy 300 million dollars worth of heavy machinery. Russia is reported to have earmarked 10 billion dollars to be spent over a 10-year period.

With an eye to these and other expanded markets in Latin America, the Philippines, Australia, Hawaii and our own Western states, 176 firms opened manufacturing plants in Northern California during the first six months of 1945.

For here is the geographical, industrial and financial center of the new Pacific World. Here are the deep-water ports, the cheap power and fuel, the highly-skilled labor pool. Here are tremendous timber, oil and mineral resources. Here, or nearby, are plants capable of producing vast quantities of magnesium, aluminum and steel.

If your business is looking West, investigate the advantages of Northern California. The Pacific Gas and Electric Company will help you in every way possible.

Northern California...industrial center of the new Pacific World

PACIFIC GAS AND ELECTRIC COMPANY

P. G. and E. engineers will help you locate your plant

A well-trained Pacific Gas and Electric Company engineering staff has been built solely to help industrial firms learn the facts about locating in Northern California. This staff works closely with established agencies throughout the entire area, and its service includes at no charge...

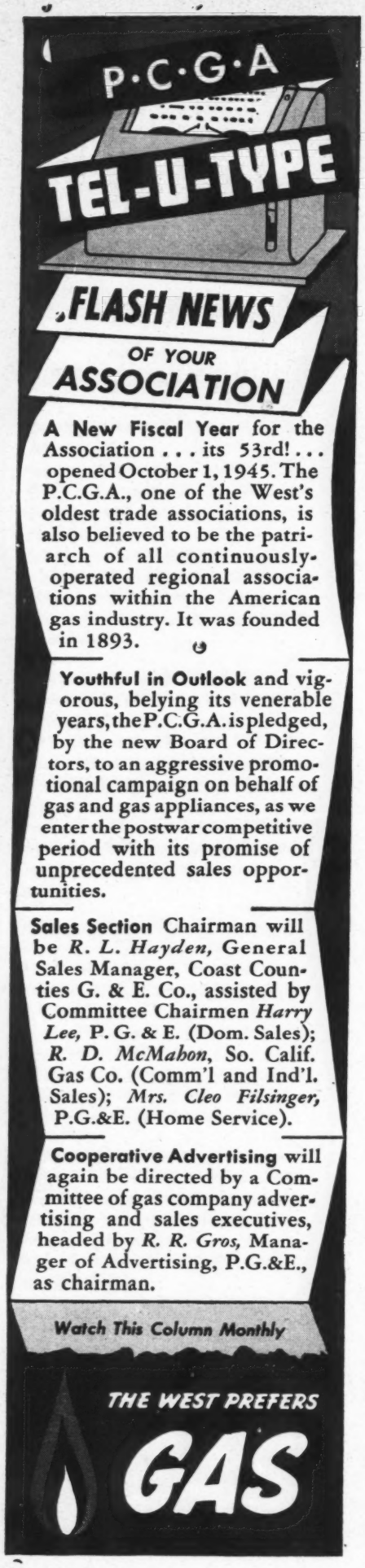
A thorough study of available sites; photographs, maps, aerial perspectives.

Complete information on environment, transportation, drainage...trucking and freight rates.

Estimated cost of property, of any necessary improvements, of power and other utilities.

For more information, or assistance of any kind, write Pacific Gas and Electric Company, San Francisco 6, California.

FIRST OF A SERIES of national advertisements by PACIFIC GAS AND ELECTRIC COMPANY which will appear in Saturday Evening Post, Time, Forbes, Business Week, Wall Street Journal and United States News.


P·C·G·A
TEL-U-TYPE
FLASH NEWS
OF YOUR
ASSOCIATION
A New Fiscal Year for the Association . . . its 53rd! . . . opened October 1, 1945. The P.C.G.A., one of the West's oldest trade associations, is also believed to be the patriarch of all continuously-operated regional associations within the American gas industry. It was founded in 1893.
Youthful in Outlook and vigorous, belying its venerable years, the P.C.G.A. is pledged, by the new Board of Directors, to an aggressive promotional campaign on behalf of gas and gas appliances, as we enter the postwar competitive period with its promise of unprecedented sales opportunities.
Sales Section Chairman will be R. L. Hayden, General Sales Manager, Coast Counties G. & E. Co., assisted by Committee Chairmen Harry Lee, P. G. & E. (Dom. Sales); R. D. McMahon, So. Calif. Gas Co. (Comm'l and Ind'l. Sales); Mrs. Cleo Filsinger, P.G.&E. (Home Service).
Cooperative Advertising will again be directed by a Committee of gas company advertising and sales executives, headed by R. R. Gros, Manager of Advertising, P.G.&E., as chairman.
Watch This Column Monthly
THE WEST PREFERS
GAS

Connelly Acquires Services Of Stone & Webster Corp.

Connelly Iron Sponge and Governor Co., a pioneer in the manufacture of gas purifying materials for the manufactured gas industry since 1865, announces arrangements for supervisory and other services of Stone & Webster Service Corp. The company has for many years engaged in the manufacture of iron sponge for gas purification and in the production and sale of gas plant apparatus such as governors, valves and gauges.

Connelly had an important part in connection with the atomic bomb project and also erected a plant in Los Angeles to supply iron sponge for use of the Rubber Reserve Corp. in connection with butadiene manufacture.

General operations of the company are under the direction of A. L. Smyly, president, in Chicago. D. K. Tavlor is in charge of operations of the Chicago plant. The Los Angeles plant is directed by J. J. Cuddihy. Elizabeth plant operations are under Ellsworth Ungethuem.

Independent Gas Group to Hold December Meeting

A streamlined business session of the Independent Natural Gas Association will be held at the Baker Hotel, Dallas, Texas, opening at 6 P. M., Dec. 10.

The meeting will be combined with a dinner, election of officers and directors. A short program will include a report on progress of Federal Power Commission hearings, investigating the natural gas industry; a brief statement of aims and objectives of the I.N.G.A. by John A. Ferguson, executive director, Washington, D. C., and a membership report bv Charles L. Orr, mid-continent secretary, Oklahoma City, Okla.

Arkansas Power Asks To Install Gas in Diaz

Arkansas Power and Light Co. has filled an application with the Arkansas Public Service Commission on Sept. 6 for permission to install a natural gas distribution system at Diaz, Jackson county, Ark.

The company would construct 800 ft. of pipelines at a cost of $1400 to serve 12 customers. Annual revenue is estimated at $1600.

Cities Service to Dissolve Subsidiary

The Cities Service Co. and two of its subsidiaries, Dominion Natural Gas Co., Ltd., and Consolidated Cities Light, Power and Traction Co., filed Sept. 7 with the SEC a joint application for authority to undertake a series of transactions which would result in the dissolution of the Consolidated Cities Light Power and Traction Co., as ordered by the commission May 5, 1944.

Coleman Co. Expands

A three-story brick and concrete addition to the Coleman Co., Inc., factory in Wichita, Kans., will add 27,000 sq. ft. of floor space to facilities now devoted to the manufacture of Coleman major home heating appliances. The building will be completed by January 1.

Coleman has also leased a modern factory building to be used in the manufacture of gas floor furnaces.

When added to existing plant facilities the two buildings will be a major factor in enabling Coleman to triple its prewar output of home heating appliances.

Dow Chemical Organizes Cathodic Protection Dept.

The magnesium division of Dow Chemical Co., in order to facilitate the specialized service connected with the use of magnesium anodes for cathodic protection of pipelines and structures, has organized a cathodic protection sales department. Arthur J. Smith, Jr., who has been with the company since 1937, has been named manager, with headquarters in Dow's main office at Midland, Mich.

New Engineering Firm Formed

The formation of Bechtel Brothers McCone Co., a new corporation engaging in the engineering and construction business, was announced in San Francisco last month.

Executives and key personnel have been drawn from the Bechtel and the Bechtel-McCone interests, extensively identified with major construction on the Pacific Coast, including a number of gas pipelines.

Dresser Industries Acquire Security Engineering Co.

Acquisition of Security Engineering Company, Inc., Whittier, Calif., by Dresser Industries, Inc., was completed Nov. 1. Security manufacturers rock roller bits for sub-strata drilling operations, oil field tools, specialties, and a patented metal for oilwell liners.

FPC Dismisses Rate Case

On the ground it is without authority under the Natural Gas Act to grant the relief requested, the Federal Power Commission on Oct. 9 dismissed a complaint filed by Mississippi Power & Light Co., Jackson, Miss., against Memphis Natural Gas Co., alleging that the rates charged by the Memphis company for natural gas services from June 21, 1938 up to July 26, 1943, were discriminatory, preferential, unjust and unreasonable and in violation of its contract with Mississippi Power & Light.

Write-Up Eliminated

The Federal Power Commission Oct. 5 ordered the Public Service Electric and Gas Co., Newark, N. J., to eliminate from its plant accounts amounts totaling $57,926,687 representing write-ups and other excesses of recorded cost over original cost of facilities.

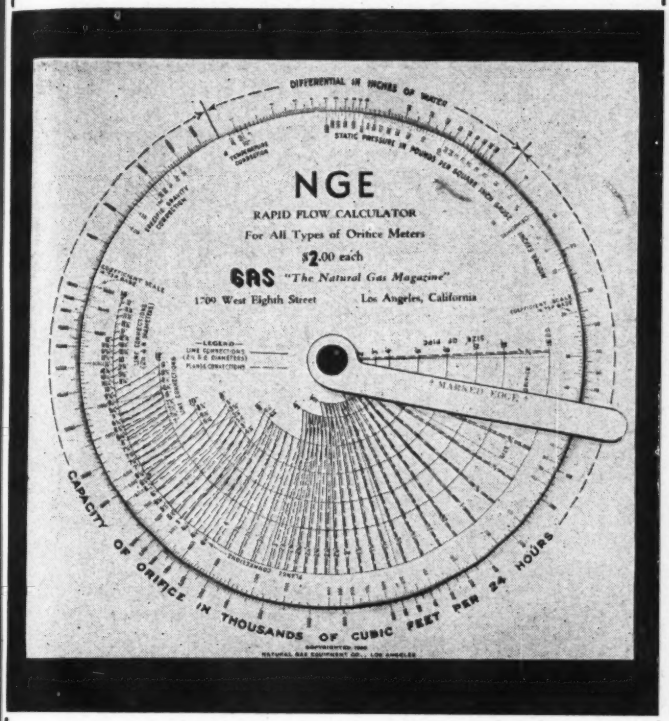
Utility Opens New Offices

Knoxville Gas Co. opened offices Aug. 27 in the Knoxville Power and Water Board Bldg., combining all city utilities.

NGE RAPID FLOW

CALCULATOR

FROM 2 inches TO 16 inches


NGE
RAPID FLOW CALCULATOR
For All Types of Orifice Meters
$2.00 each
GAS "The Natural Gas Magazine"
1709 West Eighth Street Los Angeles, California
CAPACITY OF ORIFICE IN THOUSANDS OF CUBIC FEET PER 24 HOURS

. . . will quickly compute any of a series of variables in the transmission of natural gases.

SIMPLE to operate: Set dial . . . Turn indicator . . . *and instantly find*

1 COEFFICIENT and VOLUME
2 CORRECT ORIFICE SIZE IN ANY GIVEN VOLUME
3 DIFFERENTIAL PRESSURES

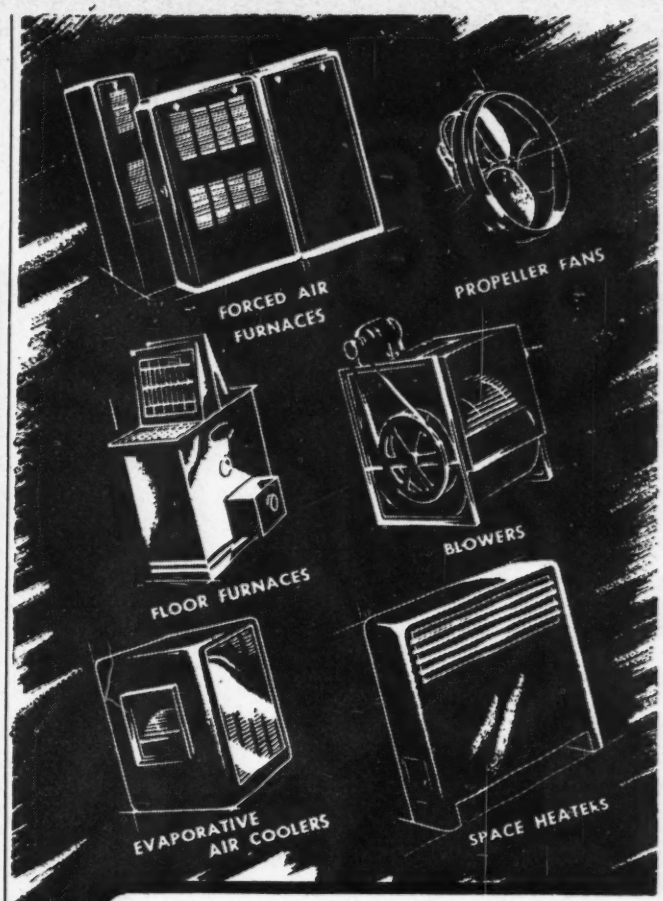
Our NGE CALCULATOR has been tested in field and desk use. Why not let it *help you* with your daily problems. If interested send in coupon and you will receive our calculator in a few days.

GAS
1709 West Eighth Street
Los Angeles 14, California

$2.00 EACH
25% discount on all orders for 25 or more

Gentlemen: Please send me.....NGE *Gas Flow Orifice Calculators* for which I am enclosing my check or money order for $.....*Add 2½% sales tax in California. Canadians add 10% excise tax.*

NAME .....
COMPANY .....
ADDRESS .....



What's Coming from UTILITY?

You can definitely count on the new products we will introduce in the home appliance field to set high records for turnover and dealer profits. Our present line of heating, cooling, and air-moving appliances, and the new ones now being added, will become available in plenty of time to help you cash in on the greatest pent-up consumer demand in history.

UTILITY

UTILITY APPLIANCE CORP.

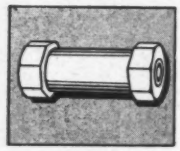
Formerly Utility Fan Corporation

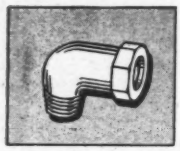
4851 S. Alameda • Los Angeles 11, Cal.

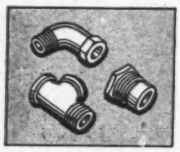
Manufacturers of the famous Utility Evaporative Air Coolers (the original Dezert Kooler), Fans, Blowers, Floor Furnaces, Forced Air Furnaces and Fan-Equipped Space Heaters (console type).

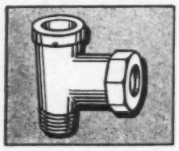
NORMAC COUPLINGS
SLEEVES AND FITTINGS

for maximum deflection, ease of "stabbing," complete confinement of the rubber!



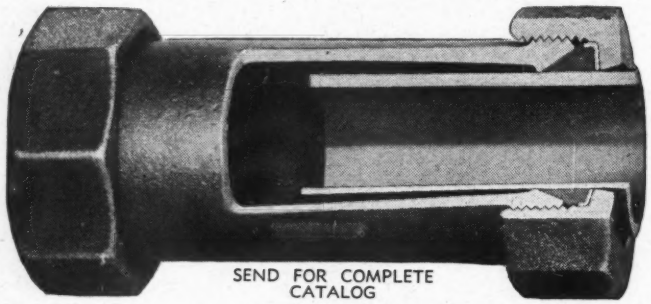






So close are "Normac" rubbers confined at the gasket tip that possibility of flow is reduced almost to "nil." These couplings, sleeves and fittings . . . approved by gas utility men across the country for their time-saving features, ease of handling and dependable service . . . are available in a complete range of sizes. Made from air furnace malleable iron they provide greater wall thickness than pipe on which used.

NORTON-McMURRAY
MANUFACTURING COMPANY
39 South La Salle St. Chicago, Ill.



SEND FOR COMPLETE CATALOG

Couplings - Meter Bars - Sleeves - Cocks - Bell Joint Clamps - Service Tees & Ells

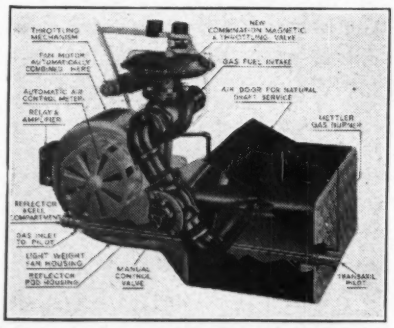
Mettler "FAN-AIR" Gas Burner

Picture reveals essential and highly desirable POINTS of Fan-Air mechanical draft gas burners. Not just a gas burner but a COMPLETE AND FULLY AUTOMATIC BURNER SYSTEM, factory tested and ready for application when received. It's the most modern gas burner and easier to install.

(NOTHING ELSE LIKE IT)

Sizes 5 to 300 H.P. Prompt Shipments

IDEAL FOR SCOTCH MARINE BOILERS



LEE B. METTLER CO.
406 SOUTH MAIN STREET ★ LOS ANGELES 13, CALIFORNIA

GAS METER INDEXES AND FITTINGS

Many Standard Meter Parts Carried in Stock

We will be pleased to submit quotations to your specifications and blueprints.

THE E. F. GRIFFITHS CO.

346 E. Walnut Lane **Philadelphia 44, Penna.**

CURRENT READING

Paloma Unit—An Advanced Oil, Gas, and Products Producing Operation—K. B. Barnes. "Oil and Gas Journal," Aug. 18, 1945, pp. 112, 113, 115.

Part 1. In this article and two to follow, the author presents a picture of the Paloma oil, gas, and products producing operation. Many "firsts" and combinations of advanced features are present in the most modern project. As a hydrocarbon-recovery project, it is classified as one of the most scientifically arranged programs in existence. Because of the many phases, details and multudinity of equipment involved, the complete description is made, for brevity, in "picture" form, accompanied by condensed data and discussion.

Part 2. In this article the processing cycles and related process equipment of California's only combination cycling and pressure-maintenance plant are discussed.

World's Largest Absorption Plant—F. H. Love. "Petroleum Engineer," Aug., 1945, pp. 52058. Recent addition by J. S. Abercrombie Co. and Magnolia Petroleum Co. of a high pressure absorption unit to the existing recovery and pressure maintenance.

Journal of Research, May, 1945, Bureau of Standards RP1651. Method for calculating the properties of hydrocarbons and its application to the refractive indices, densities, and boiling points of the paraffin and monoolefin hydrocarbons. William T. Taylor, John M. Pignocco, and Frederick D. Rossini. Price 10 cents.

Selection of Gas Dehydration—A. R. Young. "Petroleum Engineer", Aug., 1945, pp. 133, etc. Points on which to base selection of gas dehydration that will maintain maximum economical capacities.

Testing Gas Production. "Oil Weekly," Aug. 13, 1945, pp. 54, 55. Whether for testing in primary or secondary production pools there are several methods commonly used for measurement of gas. Selection of the type to use depends on the accuracy required and producing characteristics of the wells to be tested. Most common methods are: 1. Pitot Tube; 2. Minute Pressure; 3. Back Pressure; 4. Side Static; 5. Orifice Meter; 6. Orifice Testers; 7. Recording Orifice Tester; 8. Positive Meter. Each of these methods is briefly described.

Orifice Meter Pressure Extension Chart—W. F. Martin. "Petroleum Engineer," Aug., 1945, pp. 84, etc. The derivation of the chart is given, and its use illustrated by the solving of problems.

Conservation of the Nation's Natural Gas Reserves—A. M. Crowell. "Petroleum Engineer," Aug., 1945, pp. 164, etc. Author discusses: Types of gas reserves; The problem of conservation; Gas for carbon black manufacture; Reserves in gas-condensate fields; Historical background; Gas-oil ratio programs.